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ABSTRACT

This two-part report, through the analysis of a number of experimental attempts to answer two basic questions: What form has the change in the teacher's role taken? What policy should be adopted to foster this change? Part 1 is a general report that covers the major themes which emerged from the case studies outlined in part 2 and from discussions at a meeting of experts organized in March 1972. Topics discussed are the directions of change in education, changes in the role of the teacher due to change in the teacher-learning process, and preparation for a new role. Suggested areas for future research and development are appended. Part 2 consists of 11 papers written by experts in the field of education and divided into two main themes: examples of national experiences and attitudes toward innovation and policy implications. (PD)

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THE TEACHER AND EDUCATIONAL CHANGE : A NEW ROLE

VOLUME I

GENERAL REPORT

SPMS 712

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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PREFACE

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The increasingly fundamental changes which Member countries are making in the very objectives of their educational systems call for corresponding changes in the functions of teachers and the ways those functions are performed.

Although simultaneous changes will have to be made at all levels and in all types of education, the OECD survey has been confined to primary and secondary education. It will be seen that certain of the conclusions in this report are of undoubted concern to other levels and types of education.

The fact is that the national authorities are now trying to find an answer to two major questions : what form has the change in the teacher's role taken and what policy should be adopted to foster this change ? Viewed against the more general background of the trend in educational and cultural systems, it is clear that the key problem might be stated as follows : how does the teacher react to innovation and how can he be made into one of its principal agents, with due regard to his place in the system ?

In the present volume an attempt has been made, through the analysis of a number of experimental innovations, to find an initial answer to these basic questions. The OECD has asked a number of experts to draw conclusions from work and experiments which have been undertaken in various countries. A general report, comprising the first part of the present publication, covers the major themes which emerged from a number of case studies outlined in the second part and from discussions at a meeting of experts organised in March 1972.

The time chosen for the analysis is also of considerable importance. Indeed, a large number of Member countries are no longer suffering from the severe shortage of teachers which affected them a few years ago. But, as the OECD has already shown in its survey Training, Recruitment and Utilization of Teachers in Primary and Secondary Education (1971), this type of development in final analysis does not generally improve quality. As shown in another

survey (1) also relating to the survey whose results are published in the present volume, it is when the teacher/pupil ratio and the qualifications of teachers begin to improve that national authorities concern themselves with the integration of quantitative and qualitative aspects in the recruitment and utilisation of teachers.

The integration of these aspects, which is essential if reforms are to be realised throughout the educational system, requires considerable coherence in national policies. Indeed, all the other underlying elements in the educational systems must be simultaneously changed if teachers are to be genuinely able to promote reforms when the need arises. The conclusions which have been reached on the subject of the present publication are ultimately inseparable from those which have already emerged from previous OECD work on the structures, contents and methods of education.

The Report which is published under the responsibility of the Secretary-General was compiled as part of the Education Committee programme.

1) See Volume II in the present series, OECD, 1974.

Part One

GENERAL REPORT

INTRODUCTION

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The experts' meeting on "the changing role of the teacher and its implications" had the papers of this volume as their common background. The present document is a general report of the main ideas emerging from the papers and the debates (1).

The common theme underlying these papers is that the role of the teacher is under mounting pressure to change. The contemporary situation in all Member countries is that tensions have arisen in the teacher's role resulting from the co-existence of education systems which have changed slowly and social contexts that have changed fast. The experts' contributions are attempts to suggest firstly the general direction of change that is occurring in the structure of education and affecting the role of the teacher and, secondly, policy measures for improving the effectiveness of the teacher and for reducing the conflict that has become a continuing feature of the teacher's role.

As previous OECD studies (2) on teachers have shown, the priority given to the effort to recruit enough teachers during the last two decades could now be shifted to allow far more emphasis on quality. The teaching body is now composed of a larger proportion of young teachers because of the increased rate of recruitment. These new teachers are due to spend a long time in education. There is little hope of progress without programmes for systematic continuing training. The education of teachers will be at the centre therefore of any programme of educational reform. Fortunately this is a favourable time for changes in the initial and in-service education of teachers.

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- 1) The OECD is very grateful to Dr. Marten D. Shipman for his help in preparing this report in his capacity as rapporteur of the experts' meeting.
 - 2) - Training, Recruitment and Utilization of Teachers in Primary and Secondary Education, OECD, Paris, 1971.
 - Teaching Resources and Structural Change, Conference on Policies for Educational Growth, Paris, 3rd-5th June 1970, Vol. V, OECD, Paris, 1971.

A. THE DIRECTION OF CHANGE IN EDUCATION

It is not possible to determine, in detail, future changes in education among Member countries; neither can the rate of any such changes be predicted accurately. Nevertheless, there is sufficient evidence for most likely direction of changes in the immediate future to be detected.

Towards a longer education for all

The most obvious trend in all countries is for universal, popular education to be extended to older children at one end and to younger children at the other. The motives for introducing earlier entry and later leaving are economic and social as well as purely educational. Mass education progressively extended to older children does seem to produce a demand for even more education. Normal economic relationships seem to be reversed so that supply stimulates demand. The teacher is an important agent in satisfying this demand.

The demand for education is, however, unequal and seems to result in an even wider divide between those who will go through schools to higher education and those who will leave early. As teachers become agents for mobilizing increased numbers into more and more education they will, therefore, be faced with a resistant minority for whom education offers relatively less and less. While guiding the able and motivated children through to higher education teachers will simultaneously have to cater for those who are likely to show an open resentment of compulsory schooling and will want to leave school as early as possible.

The difficulties faced by teachers working with children from poor social backgrounds who fail to learn, are shared with social workers and others. It is an old and intractable problem, but what makes it more pressing today is not just the greater numbers involved for a longer time, but the professional perception of it. Failure to learn is not just seen as unfortunate but increasingly as intolerable because lack of verbal, writing and computational skills presents a serious problem in the modern age where manual jobs, which near-illiterate persons can perform, are becoming scarce. The teacher of these under-motivated, often difficult children is expected to succeed where society has failed. The school systems and the teaching profession are now seriously concerned not only with the problem of extending the education of a greater number of children, but above all with the need to equip

even the early leaver with minimum social and academic skills, so that he can function in present day society. This calls for a radical change in educational policy, because, until now, the success of the schools in detecting and developing talent has tended to consolidate the social inequalities that lie under the distribution of ability.

Another important feature of a longer education for all is the increasing demand for continuing education from all sides. Further education for youngsters and adults, organised by formal or informal education institutions, will bring new challenges to the teaching body. In the future, a new system of recurrent education open to all individuals could completely reshape the relationships between the local community and the school and its staff. To conclude, the major task in education in the next decade may not be just efficiently to detect and develop the talent of the able or to help overcome the learning problems of socially and educationally disadvantaged pupils, but to stop any widening of the gap between these two groups and, if possible, to close it. This gap and the political instability that can result from it will have to be a recurring theme in future educational policy.

Towards a changed structure of authority

The role of the teacher has traditionally been to conserve the values of his society. In pluralistic societies, however, there is no longer a broadly agreed blueprint of values as a guide and the teacher faces rapidly changing patterns of often conflicting versions of the good life. Mass education brings awareness of the material, economic, political and social factors that govern men's lives. The teacher is no longer one of a small group of educated people in a sea of illiteracy. Parents and children are increasingly in a position to challenge the value of schooling. Furthermore, they can challenge the ideological bases of curricula. In our societies it is increasingly difficult to assert an authority which rests on tradition or on a post in a respected institution. Teachers are groping for personal and professional authority within changing educational structures at the same time as the traditional agents of socialisation such as church or family are affording less support.

The teachers' difficulties are increased by the pressures to respect minority cultures. While religious, racial and regional minority groups are asserting their right to preserve their own way of life in the face of dominant national cultures, there is

growing demand that minority claims be recognised as legitimate and realised in part through changes in education. Teachers are being asked to overcome social disadvantages without alienating children from their subcultures.

The teacher has always been only one of a number of educating agents. What is new is not just the development of new media of great power to educate but the frequent contrast between their message and that of the school. The mass media, whether serving commercial interests or not, are spreading values and styles of living that often contrast sharply with those supported by the teachers in the schools. The net effect of the mass media may be either beneficial or harmful in practice, but their existence faces teachers with what is felt by them to be an alternative and often conflicting influence on children. To the educational problems raised by a recognition of the values of a pluralistic society must be added those created by the media stressing new life styles. The teacher will have to face and try to mediate the contradictions and conflicts which the media create for many of his pupils.

Towards a new distribution of knowledge

The increased rate at which new knowledge is being produced makes the continuing efficiency of teaching depend not only on keeping up to date in subject knowledge, but in being aware of, and able to implement, new curricula. As more resources are invested in curriculum innovation in education the ability of teachers to respond efficiently becomes more important, yet more dependent on training and re-training.

The expansion of knowledge on the one hand and the demand for new objectives of a social and personal nature on the other, are also changing the curriculum in schools. It is not merely a replacement of redundant knowledge by new, but a recognition that the transmission of a limited body of facts is now inadequate by itself as an education. If knowledge is expanding and the rate of knowledge redundancy as high, a first priority is an education that will enable children to learn for themselves, secondly an education that extends throughout life and thirdly an education that takes personal development and social interaction in planning curricula.

It means that subjects or groups of subjects will be increasingly studied through an analysis of their structure and methods and that a greater emphasis will be placed on the links between disciplines which are usually taught in isolation. Another feature of these developments is the role which will be played by discovery

and enquiry methods inside or outside the classroom. Lastly, cognitive learning will not be considered as the only educational objective ; disciplines helping the affective development of the pupils will play a greater role than in traditional educational systems.

Towards an open education rather than schooling

Available evidence suggests that the effectiveness of the schools in giving an education that can simultaneously be efficient and humane, economically valuable, while maximizing opportunities for all pupils regardless of social and family background, depends on co-operation with other educating agencies outside the schools, particularly with parents, local community organisations, social services and employers. The extension of education affects the teacher's position as a monopolistic education expert.

The trend towards an open education is detectable in innovations within most Member countries and it recurs in some of the expert papers. It is recognised that the school can no longer be an isolated agency once universal popular education is extended. The support for a more open education at present comes largely from those concerned in the education of disadvantaged children. The school is often seen as an inappropriate organisation for reluctant adolescents. The support for more links between schools and other educating agencies to form a genuine education system has also come from some of those concerned with increasing the efficiency of more traditional schooling as it is seen as a way of mobilising support for the teachers. It may also be a solution to some of the rising costs of staffing and of extending schooling in conventional buildings.

The educational changes listed above are based on a limited number of innovative cases. Their spread will require a deep modification of the structure, content and methods prevalent in contemporary educational systems. More continuity and coordination will be necessary between the different levels of the system to avoid difficulties of transfer for the pupils. Comprehensiveness and flexibility will be necessary at each level of this system in order to reduce the inequalities of prestige between the different types of education, for example between general and vocational education. As was indicated in the Swedish example, a new type of teaching and learning will not be achieved without a break with the traditional framework of the school, the class, the lesson, the subject, the book and, of course, the teacher.

II. CHANGES IN THE ROLE OF THE TEACHER DUE TO CHANGE IN THE TEACHING-LEARNING PROCESS

Changes in the learning process

The projected developments in the nature of education imply changes in the way learning is organised in schools. There is likely to be a shift in emphasis from teaching as the transmission of knowledge to teaching as the organisation of learning. It is this that will most deeply influence the role of the teachers. It will also be a major factor in their own efficient education. The transition will not be easy, as traditional teaching methods are often central to the teachers' exercise of authority. This is why radical changes in the nature of education will have to be accompanied by changes in the way teachers are trained.

At the heart of the contributions by the experts was agreement over the direction in which changes in the learning process were moving and in which acceleration was required. The teacher would become more the manager of the means to acquire knowledge, less its transmitter. It was recognised that the conventional teaching situation was often inefficient and, for unmotivated adolescents, frequently useless. The changes envisaged can be summarised as follows :

- the student must be made genuinely responsible for his own learning ;
- the organization of learning must facilitate the acquisition of skills for further learning, not just the acquisition of knowledge itself ;
- the development of social and personal abilities becomes as important as cognitive learning ;
- evaluation must become the responsibility of the learner as well as of the teacher ;
- the efforts of the learner to plan, implement and evaluate his own work must be accepted as legitimate by the teacher.

These changes do not diminish the role of the teacher. Even among older children the teacher would remain the manager of learning situations and particularly of the resources to be made available. Progression to self-directed methods will have to be carefully monitored, especially in the case of children coming from culturally deprived backgrounds. In this latter example, the authority structure of working class homes is another element to take into consideration (see Leila Sussmann). As the attitude of teachers

can be crucial in deciding the success or failure of innovations (see Douglas A. Pidgeon), it is clear that the teacher will have to be equipped with a high level of skill which will offer him the possibility of creating the learning environment most suited to the individual needs of his pupils.

The relation between teaching and learning

The role of the teacher in situations governed by an accent on learning rather than teaching will probably change in the following directions :

a) in the structure of the learning situation :

- towards individually tailored work assignments ;
- towards a less rigidly scheduled working day ;
- towards final assessment based on ongoing work rather than examinations ;
- towards a more equal, co-operative working relationship between teachers and children.

b) in the techniques of the teacher :

- towards a greater familiarity with a wide field of knowledge, not for exposition, but for guiding students and evaluating new developments ;
- towards mastery of the sources of knowledge and methods of enquiry rather than the knowledge itself ;
- towards the setting of objectives, the motivation of students and the assessment of individual work rather than class teaching ;
- towards acceptance of new sources of learning in both media and community ;
- towards an ability to work closely with parents, counsellors and social workers to remove blockages to learning and to stimulate motivation.

Once again, these changes will involve skills different from those demanded of teachers in conventional teaching situations, and will include the ability to handle relations with other important agents in the education of the children both inside and outside the schools.

c) in the attitudes of the teachers :

- towards a fuller recognition of the importance of understanding the processes of child development, the social

background of children, and of the impact which teachers' attitudes and expectations have on the child's performance and development ;

- towards recognition that colleagues inside the school, experts outside and indeed older children, may be essential to the child as sources of learning ;
- towards a recognition of the relevance and legitimacy of some of the knowledge acquired by the children from their environments and the mass media ;
- towards being reconciled to exposure to the observations and possibly the criticisms of children and colleagues, particularly when involved in team teaching situations ;
- towards acceptance of the responsibility of being involved in decision-making inside the school ;
- towards acceptance of being in contact with educational research and development activities ;
- towards accepting paraprofessionals and auxiliaries in the schools as partners in a common enterprise ;
- towards accepting a diminution of traditional authority in relation to children - particularly to older children - and their parents.

Teaching as a cooperative exercise

Most of these innovations involve team teaching, individualised learning, interdisciplinary areas, enquiry methods, open school activities, educational technology and involvement in the planning and implementation of new curricula. These innovations are discussed in detail in the experts' papers, illustrating clearly their many implications for the future teacher's or educator's role. We will only emphasize a few key points.

In most cases changes in technique have been accompanied by changes in relationship with children, colleagues and administrators or researchers outside the school. But both have involved changes in attitude. The key feature in the success of these innovations seems to be support for the teachers as they leave the security of traditional and didactic roles and adopt an experimental and open stance.

The involvement of teachers in teams which may include auxiliaries and specialists in guidance work as well as academic subjects and which may take place in open-planned areas is a most radical contemporary change in the nature of teaching. It removes the teacher from the security of his closed classroom and exposes

him to the views of other specialists. But it also makes the teacher a member of a planning team. Now learning situations involve the continual re-making of curricula and particularly of materials and this requires cooperation based on advanced planning. This internal school planning will involve the whole educational and administrative staff of the school. But curriculum development is often initiated outside the school and only tends to involve a minority of staff. In this case teachers may come into close contact with researchers and with those responsible for planning the general organisation of schooling. But this cooperation between teachers, researchers, planners and other specialists can only have a lasting impact within schools if there has been advanced planning to prepare the whole school staff for the change, even if they are not directly involved.

It is when the move towards the cooperation between teachers is combined with the new emphasis on the part to be played by the learner in his own development that the radical changes in the teaching role become fully apparent. Indeed the term "teacher" becomes misleading, for the teaching that remains is primarily concerned with equipping the child with the skills necessary for self-directed learning to occur. But even this is supplemented by activity designed to motivate, remove obstacles to learning and ensure that individuals have acquired the basic knowledge necessary for further work. With older children the management of learning resources, individual scheduling and counselling may take priority. But at each stage of the educational process a high level of skill is required and a new title such as "educator" may be more appropriate than the term "teacher". As a consequence of these changes, the idea of a diversified but unified educational profession is slowly emerging. Its members are not only teachers in a restricted sense, but are also now specialists with their own place in the educational team, such as careers adviser, psychologist, resource manager, remedial teacher, information specialist, etc. To these we can add headmaster, educational adviser, and even the inspector responsible for the whole of a school district.

The acceptance by teachers of roles as counsellors, advisers, planners, managers and so on cannot be expected unless they are given the necessary facilities. At present classroom teaching is built into the design of schools. In many countries the teachers lack the study rooms, tutorial rooms, secretarial help that will be required if they are to become genuine educators. They claim that they have not sufficient free time for their innovative efforts,

which is an argument in favour of a complete reshaping of the school day. It is certainly true that teachers, particularly when involved in innovations, may be exhausted by their efforts to overcome the lack of support for their new role.

C. PREPARING FOR A NEW ROLE

Resistance to change

It has already been pointed out that there is resistance to change implied in the traditional role of the teacher. Teachers are trained as transmitters of culture, as selectors for adult status and are expected to set and maintain conventional moral standards among children. Their expectations of pupils' performances, their attitudes concerning the aims of a school as an institution are other variables to take into account when the teacher's resistance to change needs to be overcome. There may also be a more specific resistance that appears during innovation. Change is suspect when it is imposed on teachers who have played no part in promoting it. When introduced into an unchanging school structure, an innovation can be distorted or converted into a make-believe substitute for actual change (see Gilbert De Landsheere). Innovation cannot be a transplant into an unprepared school or tissue rejection will occur.

There must also be visible rewards to overcome resistance to change within the schools. In a recent innovation described by Marten D. Shipman involving team teaching, enquiry methods and integrated studies, teachers compared the considerably greater time and energy involved with that used up by their colleagues using conventional subject teaching. The success of this curriculum project depended on a high level of personal investment by the teachers. There appeared to be a threshold of personal investment beyond which the teachers became aware of their part in an exciting experiment through which they were receiving public recognition. Below this level, the commitment to innovate was weak and failure resulted.

Resistance to change can also come from employers, from higher education and from parents. The first two demand formal examinations as a guide to recruitment, while the latter reinforce this pressure through the drive to ensure the best opportunities for their own children. The innovating school teacher comes under pressure as the competitive position of children is thought to be

threatened. Again, the solution may be to plan for change across the whole education system or to ensure that innovation is preceded and accompanied by a skilfully mounted public relations exercise and possibly the negotiation of special entrance requirements into occupations and higher education.

The education of teachers for their new role

Priority to in-service training

The changing emphasis from teaching to learning that made the label teacher misleading has also made training a misleading term. It is no longer possible to equip a student with a body of subject knowledge and the methods that will enable him to teach it efficiently for the rest of his working life. Indeed, the re-organisation of education systems to facilitate continuing, self-directed learning by the students will have to include opportunities and incentives for the teachers to learn in the same way.

There seems to be international unanimity on the crucial part that should be played by continuous in-service education for teachers, for teachers of teachers and for others involved in administration in the education system. Continuity and comprehensiveness are the key terms : continuity to ensure that there was awareness of, and involvement in, new developments ; comprehensiveness to ensure that all those responsible for the education of the young were working together as partners.

The structure of in-service education follows from these two principles of continuity and comprehensiveness.

The most beneficial system would probably include :

- continuous in-service training for teachers ;
- continuous in-service training for those in teacher training, senior positions in school and in administration, including periodic returns to the school situation ;
- a form of in-service training that would bring together teachers and those in senior positions outside the schools in the same activities ;
- involvement not only in learning about new developments but in participating actively in them ;
- a form of in-service training that will bring together teachers from different types of school and of different levels of education ;
- a form of in-service training for the whole staff of a school or department.

The establishment of such programmes is a first priority. It involves however not only a new attitude among teachers to engage in the continuing re-evaluation and development of their role but in the structure of teacher education and research. At present these programmes tend, in most countries, to be organised in a way which accounts for the isolation of the teachers. Too often they are receivers of information only and too few of them are involved. Present national policies give an impression of rather uncoordinated, haphazard activities, except perhaps in Sweden where priority on in-service courses has been given to teacher trainers and teachers engaged in R&D activities (see Bengt Thelin). If teaching is to be a rewarding occupation the present detachment of teachers from the excitement of involvement in R&D programmes must be overcome.

If the development of teachers has to be effectively fostered throughout their working life, continuous training must be considered as a normal characteristic of their work. However, even here it must be noted that assumptions made on what could be the character of future continuous teacher training involve vital policy questions. A system aimed at creating a body of teachers who would seek self-development throughout their career would have far different implications than one which, for example, merely would require them to submit themselves to a certain number of courses or hours of re-training per year.

Changes in the initial training of teachers

Teacher education has been the subject of serious discussions during the last 15-20 years. The switch from teacher-centred to child-centred learning situations involved a switch in teacher education from an emphasis on skills in transmitting knowledge to one stressing the child as the agent of his own education. But, even, if the pupil may select the problem to be investigated as well as the methods towards its solution, it will still be necessary for the teacher to organize the context for this learning. So, for all teachers, and especially for those working with adolescents, more emphasis has been put on the dynamics of motivation and perception, on the interaction of small groups and above all on the skills involved in organising learning situations, managing resources and the individual counselling that will facilitate self-discovery. However, in a few countries, where there were innovations in these directions, there is now an air of caution. The new organisation of teacher education did not always give good

results. A swing back again during the last years, to teacher-centred methods is apparent and the reasons for this reaction need to be investigated. There is a danger of moving ill-prepared into promising developments. Evaluation has to accompany innovation. Furthermore, changes in the education of teachers are inseparable from other changes in the so-called frame factors in teaching and learning. The school class, the lesson, the subject, the book and so on provide a context, often conservative, for the work of the teacher. If this context remains static, change in any one part of the school system or in the education of teachers is likely to prove ineffective.

There are however innovations in the schools which are leading to a break-up of a long tradition in teacher training. It means that there is no training blueprint. The student cannot be instructed in a number of techniques to apply to set situations in a classroom completely under his control. For early teaching of skill subjects such as reading, such standard techniques may still be important. But standardised procedures for classroom teaching have become inappropriate. This also means that fewer, if any, techniques of teaching can be taught in colleges divorced from the school. If the emphasis is to be on group dynamics, on helping individuals, on co-operation with colleagues in teaching teams, on mobilising the help of parents and social workers, more training will have to be done in the schools, on the job.

As far as the content of courses in teacher education is concerned, the need is to accelerate the introduction of evidence from the social sciences and the social context outside of schools. Subjects likely to produce this sensitivity to environmental factors and to cultural variety are sociology and cultural or social anthropology. Training in guidance and counselling and an understanding of the labour market are other important areas. This knowledge would enable the student teacher to appreciate the influence of different backgrounds on children's performance in school. It is equally important however that the student teacher becomes aware of his own attitudes and expectations and their influence on attainment among the children for whom he will be responsible.

The importance of this reform aimed at removing the cultural myopia of teachers, which is often the result of their own narrow schooling, comes from the nature of the innovations recommended. These are aimed at removing the boundaries between school and community and at an acceptance of the child's experiences outside the

school as a legitimate source of knowledge. Obviously, the teacher who could use this source of knowledge needs to understand it and to appreciate its importance to the child. This contact with sensitizing disciplines and experiences should also focus the attention of teachers on developing the affective part of the pupil's education, which, until now, has been neglected.

These changes in the education of the teacher will necessitate changes in the status and organisation of the colleges concerned. The traditional system for preparing teachers usually contains two channels, one through university, the other through colleges of education. These in turn usually lead into academic secondary education on the one hand, and primary or lower levels of unselective secondary schools and the teaching in vocational and technical subjects on the other. Little comment is necessary on this division. The differentiation has been an anomaly as comprehensive secondary schooling spreads. It acts as a damper on the hopes and efforts of the teachers coming from the non-university sector, while cushioning the teachers coming from university against the need to keep abreast of the developments affecting their role as teachers.

The previous OECD studies of the training, recruitment and utilization of teachers, its up-dating (1) show the particular interest of Member countries in linking the training of primary school teachers to higher education. Recent decisions, in various countries, reveal a similar trend in favour of breaking the isolation in the training of certain categories of teachers - art, music, physical education, various vocational and technical subjects - in reinforcing the contacts with higher education or in merging this training with the university curricula. These studies also show support for a more solid pedagogical training for academic secondary school teachers. One group needs a deeper academic education, the other a deeper professional training. There is everything to gain from bringing all the groups into closer contact with each other as they are prepared for teaching.

The linking of teacher education to higher education will inevitably change the organisation of the training colleges. They will have to shed their restrictive practices. It would be anomalous if open schools co-existed with closed colleges. If active learning is to spread in schools, it must be practised in the colleges. Such a reform in the colleges would also facilitate

1) See Volume II in the present series, OECD, 1974.

co-operation with schools in the preparation of student teachers, relate theory more closely to practice and help link teacher training, both initial and in-service, to R&D activities.

Because of recruitment problems, this new emphasis on quality in teacher training might be difficult. In many countries teacher training has been used as a solution to the problem of excess student demand for higher education. But the emphasis on education for teachers throughout their career may solve this problem of unsuitable entrants. Initial training might be best planned as part of a total recruitment, training and re-training programme. Once the education of teachers was seen as a number of continuous stages such as those implemented in the Swedish teacher training law of 1968 or recommended in the James Report on the education of teachers in England and Wales, quality should improve through the opportunities for the poorly motivated to drop out and the fully motivated to keep up with current developments and move into the key positions within the education system. This will involve risks as well as gains for the student teachers. The price of a student entering a teaching career including continuous education should involve acceptance of the chance that he or she might be found unsuitable. Promotion should go to those who prove most skilful and keep up with new developments.

The reform of the structure and the content of teacher education must be organised in such a way that, at the beginning of his course, the intending teacher has the opportunity to be in contact with the school organisation and work and with the pupils inside or outside school. As it exists in a few countries, if the student does not seem suited for teaching, the credits of general education and perhaps some more specialised credits can be organised in a way that helps him to take additional credits to go into other occupations, without wasting his year of training. The same common core of curriculum combined with continuous training could facilitate the mobility of the teacher outside education if he so wishes. But this does not mean that any generalist can make a teacher, as has been unhappily the case in many countries in the last two decades. Real professional education has to some extent to be exclusive.

Nevertheless there is a prerequisite in the formulation of a new policy : the key to improvement in the training of teachers lies with the training and re-training of those who teach the teachers. Probably the most developed experiment in improving the education of teacher trainers has been organised in Sweden. Priority

there has been given to the education of this group in the drive to promote reform throughout the school system. This applies particularly to those employed in the teacher training institutes who are seen as the heart of the system. But the Swedish system also involves teachers in the schools in the supervision of teaching practice and their preparation and involvement in ongoing development work. It definitely implies that the best elements of the teaching body must have the opportunity, through a more flexible organisation, to be promoted to the colleges of education, to pilot or experimental schools, to R&D activities, to pedagogical advisory bodies, or to other senior teaching or administrative positions.

Such new equal relationships between different parts of the educational system, which in many countries are still separate, reflect changes in schools. Once they become open institutions, communication networks will tend to switch from the vertical to the horizontal throughout education. Lateral communication between innovating teachers at all levels is not only an important channel for sustaining innovation but is the source for the initiation of reforms from the grass-roots. Teachers must come to feel part of a developing network of information which they are helping to generate.

Finally, if children are to play an active part in their own learning, to play more equal roles in relation to teachers especially in the secondary schools and to spend more time outside conventionally organised classrooms, so must teachers. The actual time spent teaching will probably decrease. The time in planning, developing and evaluating new curricula and learning strategies will correspondingly increase. But these expanded activities cannot be confined to the school and should involve co-operative action with other teachers and researchers in colleges and universities. Planning for change in one part of the education system must involve changes in all parts. It must also involve educators from many levels working on common programmes.

The need for a changed social and political status

There was general agreement that the teacher, involved in the service sector and concerned with human development, will need to be related to a reorganised reward structure at a time when his role is undergoing drastic changes. New attitudes, new skills and new career patterns seem to be slowly emerging: a number of experts defined this as an increasing professionalisation because certain characteristics of the professional will have to be found

in the evolving teacher's role. But as Susan Balloch states it it will be a redefined "open" model of professionalisation more congruent with changing social values.

The profound changes in the education of teachers, in its content and in its continuation throughout active life, could be the tool for a better and deeper mastery of the teaching-learning process. A greater autonomy in decision-making will be possible for the teacher, based on this revised continued training. But it was agreed that the need for changed relationships with pupils on the one hand and with parents, social workers, administrators, employers and others outside the school on the other, comes as part of the teacher's position as an expert in a learning system which extends beyond the school, and implies a share of educational responsibilities between the teacher and all these other individuals. This new position involves a different perspective on the part of teachers of their role. Up to now, the employment of auxiliaries and para-professionals has been viewed with suspicion, as a source of possible dilution. Ideally the organisation of teams of specialists within schools and their co-operation with others concerned with the socialisation of the young in the community will come to be seen as a reinforcement of the teacher as expert educator and consultant, advising others on the basis of his specialist knowledge and co-ordinating their efforts.

Another feature of the professional attitude of the teacher would be his understanding of educational research and development, his participation in it and his role as innovator. The organisation of research, of curriculum development and of specific trial and experimental projects in schools occupied much of the attention of the experts. Up to the present, most change in education has come about as a result of political or administrative decisions. The time had now come in education, as in other activities, when research should be one of the key sources for educational innovation. Research also has great value in building an adaptable school system manned by competent and flexible teachers. Constructive educational changes are generated by activities in development or applied research, and it was therefore felt that research and development work could provide an important means of mobilising teachers into innovations, in addition to providing necessary background knowledge.

There is evidence of the present alienation of teachers from research. Lack of sophistication in interpreting evidence, a reluctance to accept the validity of research as a guide to action

and a divorce from the research process itself all hinder effective innovation in the present system. It was agreed that there was need to bring about increased involvement of teachers with researchers, particularly in developing new curricula and techniques and in trying out new forms of organisation. But the co-operative development of curricula has strongly emphasised the need for increasing the amount of in-service training, as demonstrated by the American, the French and the Swedish cases. This has become an important feature of the Schools Council in England, with its strong emphasis on teacher participation in curriculum development and in the parallel development of Teacher Centres where teachers can meet to exchange ideas and develop new curricula at the local level.

The actual level at which teacher participation in R&D work occurs should increase in importance if changes in the structure of education reduce the distance between classroom teachers and those involved in training teachers and/or promoting research. The object in all cases should be the same. The teacher should be given the skills to interpret and use research, the opportunity to become involved in it and to feel one of a team of equals searching for solutions to learning problems in which he is an expert whose contribution is valued. This might also benefit both the quality of research and its relevance and usefulness. It also means that research and researchers need to come much closer to the schools and to the different categories of educators. A diminution in social distance would benefit all concerned in education.

It was also agreed that these characteristics listed above could not be really effective unless the teacher is actively participating in the planning, development and decision-making processes affecting educational activities. As demonstrated by Sixten Marklund, the direct or indirect (through professional organisations) participation of the teacher still depends on the type of innovation involved. But if authority comes to be shared with others this will call for changes within the educational hierarchy which has so far tended to pass down information to the teachers. Ideally there should also be a switch to co-operating not instructing. The priority given to learning over teaching in the school must be reflected in a similar adjustment in the relation between the teacher and his erstwhile superiors. It would be useless to expect teachers to promote active learning while at the same time expecting them to remain passive recipients of instructions from above.

Nevertheless, these new features of the innovating teacher as educator, using his skill not only in the classroom, but co-operating with others in the school and the community, did not convince certain among the experts that the concept of "professionalisation" was appropriate, even if they all agreed with the different characteristics listed above. They thought that some of the traditional values of the professionals were not congruent with the effective functioning of the modern "educator". They explained that certain claims for teachers to obtain recognition as professionals might give rise to an exclusive status protected from outsiders, just at a time when co-operation between teachers and "outsiders" is seen as essential for efficient learning. In other words, this professional status might be a way of increasing the distance between expert and client - the professional can sometimes keep those he is helping at a distance - whereas the changing balance between teaching and learning involves a coming together of teacher and learner. Lastly, the professional's judgement has to be taken on trust, not debated - whereas evaluation and other educational decisions are yet another aspect of educational change where the pupils will play an increasing role if waste of talent is to be reduced.

Thus, the experts' meeting was faced with two slightly different approaches, even if it was recognised that in both the teacher must have a reserved sphere of expertise where his professional competence is not challenged. The experts supporting the concept of an "open model" of professionalisation felt that a reluctance to go towards this model could entail a price in terms of qualitative recruitment as well as a danger of inhibiting the effective introduction of innovations which cost a great deal of money or go against the grain of "community sentiment". Such innovations might be more easily accepted if recommended and implemented by "professionals". There was no agreement on this issue of the balance of advantages in greater professionalisation, and more research will be needed to clarify any satisfactory definition of professionalism in the educational area.

If the group of experts did not agree on the extent to which teachers could be considered as true professionals, all of them agreed to the need to improve the social and political status of the teacher. As a logical consequence of this, it was mentioned that if we want to attract the best elements in the educational profession a new career profile must be elaborated. The most promising way forward seems to be a combination of changes inside and

outside the school. Internally, rewards for effort must be available. The present pay and promotion system that frequently fails to differentiate between the efficient and hard-working teacher and a clock-watching, incompetent colleague must be changed. The reluctance of teachers to sustain innovations is frequently the result of one-sided promotion. Here the Swedish experience was felt to be significant. The teaching organisations are concerned about the status and pay of teachers in societies where rising levels of occupational skill have reduced the relative status of teaching. If teachers are to be persuaded to co-operate they must see advantages in the new arrangements. New career patterns seem now to be emerging. Hierarchies of teachers ranging from para-professionals or technicians at the base of the team to master teachers at its apex may be a way forward. Such a differentiated teaching profession could become more necessary if the size of schools continues to increase and headships become scarcer. The best teachers must see their extra competence and effort rewarded within the school or between the school and the various institutions for teacher training, R&D activities and other educational and cultural activities outside the formal system of education, once movement between them becomes more common.

D. CONCLUDING REMARKS

The viewpoints expressed and the broad conclusions reached by the experts on the basis of their analysis of different aspects of the teacher's new role and its implications converge on a number of key questions on future policies for teacher recruitment, training and utilisation. First of all, not only is the teacher's importance not questioned, but his role is seen as increasingly upgraded even within an educational system relying to a large extent on technical aids. Human interaction, in all its complex and unpredictable ramifications, is in fact seen as an irreplaceable element in promoting the fullest possible development of the pupils' personalities. The teacher's role remains that of manager of the learning environment.

In particular, the renewed awareness of the responsibility of the schools to foster the effective development of young people from a variety of social and cultural backgrounds demands a new level of preparation and performance from the teacher. If "compensatory" education is properly defined as the capacity of the school, as part of a number of educative agencies, to foster the growth of

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its pupils within the context of their needs and life situations, no such programme could be successful without a profound involvement of the teacher. The teacher must be prepared to provide, through his intervention, the support that will counter the so far dominant influence of socio-economic forces on the child's development. In this connection, the attitudes and behaviour of the teachers and their expectations of their pupils, which, as has already been shown, are fundamental factors in pupil performance and achievement, may have tended to reinforce inequalities of educational achievement. The evidence suggests that this behaviour may often be reflected in the teaching methods that the teachers use and it is an important element to take into consideration in teacher education. Thus, to change their role, the teachers need to appreciate the danger of actually aggravating social disadvantage through traditional teaching methods.

The teachers will need a wide repertoire of teaching/learning strategies and autonomy of decision over the creation of an adequate educational environment for the pupils to be able to avoid this aggravation of inequalities. But this will not be achieved without a coming together of teacher training and retraining and educational R&D. If the teacher is to play an active part in creating and developing appropriate innovations, realistic participation at all levels will be necessary. Pupils must also be involved in this participation as well as the other groups concerned in the working of the educational system. This would make for a propensity for a greater "openness" in the system which is an essential condition for innovations which will help all rather than a favoured minority of children. Lastly, modifications to the teacher's role will have to be accompanied by an improvement in the various material factors in the school. Parallel to similar measures an improvement in the socio-economic status of the teacher will come as part of wider social changes.

As summed up in Susan Bulloch's contribution, the changing role of the teacher should therefore be examined on the basis of the following general principle: "The professionalisation of teachers and the consequent creation of a more effective learning environment for school children cannot be accomplished unless policies for improving the recruitment, training and utilisation of teachers are implemented within the context of other social and educational changes. More than any other single aspect of educational reform, new teacher policies, to be effective, call for a new social contract for education".

Appendix

SUGGESTED AREAS FOR FUTURE RESEARCH AND DEVELOPMENT WORK

These suggestions for R&D activities have been extracted from the papers prepared by the experts or from their discussions together. They focus on the need for better information on the sources of strain in the present system, the barriers that are likely to be met during innovation and the costs and benefits that may result.

Changes in staffing standards

This will be viewed as a consequence of the evolution of new teaching-learning processes and of the progressive introduction of new technologies and media in schools. The traditional pupil/class ratio, or its weak substitute pupil/teacher ratio, can no longer be the only basis for decisions concerning the recruitment and utilisation of teachers. The optimum combination of human and material (technological aids, media, etc.) resources has to be found in the context of a renewed school-day during which the teacher could meet, on the one hand, with one or two pupils, a small or a larger group of them, and, on the other, with colleagues, headmasters, pedagogical advisers or researchers for planning the school work, enlarging personal continuous education or developing curricula. A parallel theme for investigation could focus on how para-professionals and auxiliaries can be employed in this framework. Cost analyses of the introduction of these changes and particularly of self-directed learning situations into secondary schools could be of great help to assess any major national reforms.

Development of a continuous education for all involved in educational activities

Because of the scattered and uncoordinated policies implemented until now, a priority investigation will be needed into the effectiveness of types of in-service courses for teachers. Elaboration of future policies could also be based on an analysis of in-service

programmes existing in other sectors of activity. The new structure, content and methods of initial teacher training will have to be considered through their capacity to promote effective continuous education throughout the active life of the teacher. At the organisational level, the role of higher education in the initial and permanent education of teachers will need to be studied. As a complement, a study of the relation between experience during teacher training, including teaching practice in schools, with what happens later could be undertaken. This would provide information on discontinuity of experience and on the areas where reforms could be made so as to ensure an appropriate rate of innovation in schools and training colleges. Yet a further area for investigation could relate to the changes of student-teachers' attitudes toward various key issues, over the period of their training, compared to the initial attitude at their entrance to college and the attitude of the practising teacher a certain number of years after his initial training.

New patterns of recruitment and career

Recruitment policies could be rationalized if it were possible to know who really wants to engage in a teaching career and why. An investigation into the public image of the teacher and into how intending teachers, and even teachers in service, see themselves will be useful. This would, among other things, serve to highlight some of the barriers to co-operation between teachers, parents, employers, social workers and others, and prepare the ground for an analysis of problems posed by an extension of open education. A study of selective attrition from teaching could show who leaves, where they go and the policies that have led to the rate of attrition and the means of reducing it. Additional investigations into the teaching careers of professionally trained and untrained teachers could indirectly provide information on the value of current training programmes, including those of a continuous character.

We still know practically nothing about the career patterns of teachers who have been involved in innovations or have been employed in innovating schools. The suspicion is that such an involvement leads to rapid promotion. Confirmation of this would be a crucial factor in promoting grass-roots innovation and in mobilising support for planned and centralised experiments. These different proposals could provide data on which it will be possible to elaborate a new career profile in line with the need to recruit the best teachers in the profession.

Further possible investigations could directly or indirectly concern some detailed aspects of teacher policies. For example, a study of the consequences for both teachers and students of the increasing work done through educational teams would be important because it would throw particular light on the communication and co-operation that exists among teachers, the bases of mutual evaluation among them and the response of students to contacts with different teachers in the same subject areas. Another type of survey could examine the specific problems faced by teachers of older adolescents in secondary schools.

Studies of a broader kind, such as how innovations penetrate into certain schools, how educational R&D programmes are organised, how the educational system is articulated or how inconsistencies in socialisation between schools and families act as a break on proper schooling, would help to provide greater understanding of the real place and role of the teacher in the whole development of education.

Finally, there is one overall priority relating to the evaluation which should be a part of any programme of innovation in education. Evaluation is still a very under-developed research skill, yet careful monitoring of reforms in the teacher field will not only facilitate the early detection of snags but also provide evidence to guide later programmes. There is a need for a pooling of the available knowledge about techniques of evaluation and for more resources to be made available for developing new methods.

Part Two

EXPERTS' PAPERS

A. EXAMPLES OF NATIONAL EXPERIENCES

I

THE ROLE OF THE TEACHER **IN SELECTED INNOVATIVE SCHOOLS IN THE UNITED STATES**

by

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SUMMARY OF KEY ISSUES

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Modular scheduling, team teaching, individualised instruction and the open classroom are the innovations this report discusses. They have a common thrust. All of them increase the autonomy of the learner, reduce the dominance of the teacher, and provide less pre-ordained structure for the learning process than traditional education. (1)

Every aspect of the traditional teacher's role-set is affected by these innovations and their accompanying ideology. In the teacher-pupil relationship, teachers spend less time presenting the basic curriculum; much of the task of exposition is taken over by new media and books. Instruction no longer occurs in a narrowly age-graded class of 20-30 pupils, taught as a collectivity by one teacher. Rather, there are groupings which span three or four years of age. Most instruction involves the teacher with a group of 3 to 10 pupils. There is also some one-to-one instruction, and small groups and individuals do a good deal of work on their own. In the United States this type of education, especially in private schools, has usually gone along with an adult to child ratio, of about 1 to 10, although not all of the adults in the classroom are teachers.

Pupils are given many options as to what they will study and at what rate they will learn, and the options are given early. Instruction is to some degree tailored to the individual pupil's learning style.

Innovative teachers need new skills. They should be able to diagnose and provide for a great range of individual learning problems. They need to understand and be able to handle the dynamics of small groups. They need some of the skills involved in the therapeutic interview. These needs reflect the greatly increased emphasis on the socialisation function in innovative schools. Many

- 1) It should be stressed that there are a few innovations which provide more structure than the traditional school, but they appear to be rare in the United States today by comparison with the types of innovation discussed in this report.

of the leaders of the open education movement believe that their main task is moral rather than cognitive. They want to create a new type of human being; this goal is more important to them than their instructional goals.

Much innovative teaching is done in teams. The teacher's professional performance becomes visible to some of her colleagues. Teams seem to increase the flow of professional communication among teachers. They also lead to a mutual evaluation of strengths and weaknesses. Since most teams give equal authority to all the members, there are often difficult problems of dissensus. However, the full implications of team teaching for pupils as well as teachers have nowhere been empirically explored.

The increased equality in the teacher-pupil relationship also holds for the teacher-supervisor relationship. To function properly, the innovative teachers must have a good deal of professional autonomy. She cannot function, as the traditional teacher often does, like a low-level bureaucrat, following a curriculum and enforcing rules made elsewhere.

The innovative school and teacher have abdicated the selection function. They do not give grades or in any way make comparative evaluations of students' performance. Evaluation, instead, takes the form of narrative reports to the parents detailing the student's progress, both academic and social. The failure to give grades arises out of an ideological tenet that competition is destructive to learning. It appears to be true that the elimination of grading, together with the small size of the instructional group, make for affectively warmer relationships between teachers and pupils, and this probably facilitates learning. In fact, innovative schools violate one of the strictest imperatives of the traditional school: that students should be treated universalistically. That is, rather than applying the same standards impartially to all students, they treat students in terms of what are seen as their unique needs. One requirement for this particularism is that the school be small. The shift to particularistic treatment is a radical change since universalistic behaviour is a major norm to which traditional teachers strive to conform. Particularism opens up all the dangers of unwitting favouritism (with a strong social class bias) which universalism is designed to minimize.

Innovative schools are able to evade the selection function only because other parts of the school system perform it in their stead. Often it is performed by the institutions to which their graduates apply for entry. So long as the school system is

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implicated in training people for occupations, it is unavoidably implicated in the society's process of stratification. The ideology that the school system ought never to make competitive evaluations is at variance with realistic requirements. However, much of the critique of evaluation as it now exists seems valid, and it is useful to raise the question whether selection cannot be restructured in such a way as to interfere less than it does now with the kind of affective teacher-pupil relationship that is conducive to learning.

A final issue which emerges from existing research on these innovations is whether they will work with all types of pupils or only with those from a limited range of sub-cultures. Apparently, pupils who have been socialised early to depend on authoritarian external control do not function well in the context of anti-authoritarian innovation.

PREFACE

This paper describes the role of the teacher in innovative forms of elementary and secondary education, contrasting it with the teacher's role in the traditional school.

Since there are many innovations under way, it has been necessary to select just a few. I have written about modular scheduling, team teaching and "continuous learning" at the secondary level. But the main emphasis of the paper is on open education, also known as the "informal school", "the integrated day", and "the Leicestershire method". This particular innovation, with its variations, includes a good many others. For instance, it includes one version of "individualized instruction".

The paper limits itself to theory and practice in the United States. The idea of open education originated in Britain, but it has undergone a good deal of change in the process of adapting to the American environment.

Unfortunately, the most valuable literature on open education in the United States is unpublished. It consists of theses written by students at the Harvard Graduate School of Education and of unpublished monographs written for the Educational Development Centre in Newton, Massachusetts. The EDC has served as a link between British open education and interested Americans, and has been an important centre for the dissemination of the ideas of educators in this field. The other major centre of experimentation with open education in the United States is North Dakota, which I have not visited and shall not discuss. The open elementary schools which I have observed are all private; the secondary schools are public.

I

INTRODUCTION

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"The school is a despotism... in perilous equilibrium." So wrote Willard Waller in his classic work, The Sociology of Teaching, published in 1932. (1)

"It is only because teachers wish to force students to learn, that any unpleasantness ever arises to mar their relationship... If this process were unforced, if students could be allowed to learn only what interested them, to learn in their own way, and to learn no more and no better than it pleased them to do, if good order were not considered a necessary condition of learning, if teachers did not have to be taskmasters, but merely helpers and friends, then life would be sweet in the school room. These, however, are all conditions contrary to fact." (2)

The current innovations are attempting to make these conditions into fact. Their theme is that students should have greater autonomy in learning, and teachers should be non-authoritarian.

Waller wrote mainly about small town and rural schools at a time when secondary education was still spreading through the American population. Some Deweyan progressive schools existed, but their achievements did not impress Waller.

"The experimental school which wishes to do away with authority continually finds that in order to maintain requisite standards of achievement in imparting certain basic skills it has to introduce some variant of the authority principle, or it finds it must select and employ teachers who can in fact be despotic without seeming so." (3)

- 1) Willard Waller, The Sociology of Teaching, John Wiley & Sons, New York, 1965, p. 10.
- 2) Ibid., p. 355.
- 3) Ibid., p. 9.

A basic assumption behind this kind of schooling was that, "The instruction which is given consists largely of facts and skills, and of other matter for which the spontaneous interests of students do not usually furnish a sufficient motivation. Yet teachers wish students to attain... a much higher degree of mastery than they would attain, it is thought, if they were quite free in their choices." (1) The assumption of open education is precisely the opposite. It is thought that the spontaneous motivation of students is quite sufficient to carry them to high degrees of mastery.

Though Waller faithfully reported what he saw, he was aware of a price that was paid by teachers and children for authoritarian schooling :

"...it seems very likely that the intelligence which the schools reward most highly is not of the highest type, that it is a matter of incomplete but docile assimilation and glib repetition rather than of fertile and rebellious creation... Stupid students, or even students who are merely slow, are made to suffer needlessly, and the effects are lasting... a scholastic regimen that forces the dull and the clever to go at the same pace and imposes upon the capable a load of routine work intended only for the mediocre eliminates many brilliant persons by its very boredom." (2)

And of the traditional teacher, he wrote :

"The didactic manner, the authoritarian manner, the false assured tones of voice that go with them, are bred in the teacher by his dealings in the school room, where he rules over the petty concerns of children as a Jehovah none too sure of himself... It is said, and it would be difficult to deny it, that the teacher mind is not creative... Every teacher is a taskmaster and every taskmaster is a hard man ; if he is naturally kindly, he is hard from duty, but if he is naturally unkind, he is hard because he loves it. It is an unfortunate role, that of Simon Legree, and has corrupted the best of men." (3)

1) Ibid, p. 8.

2) Ibid, p. 24.

3) Ibid, pp. 382-383.

Waller know, too, that there was an inherent contradiction in the functions of schooling. The conditions for successful instruction and socialisation, which require positive identification with the teacher, are in direct conflict with the requirement that the school sort and select by ability as the first stage of selection for different places in the occupational and social class structure :

"It is difficult to reconcile the selective function of the school with its other social functions. The selective aspect of the educational machine is one which theorists frequently overlook. Yet it cries out to be included in any real reckoning up of the social meaning of the school... There are some indications that the role of the school as a selective agency is more important in present-day western civilisation than it has ever been before... We cannot take leave of this topic without noting what effect this selective function has upon the internal structure of the school. Some schools, notably the state universities, feel such a pressure of students upon facilities that they must yearly eliminate a large percentage of their freshmen. Other schools eliminate in order to keep scholastic standards high... The teacher caught in such a system is supposed to have a certain number of failures at the end of the semester, and this leads him to set up objective, but often highly artificial, standards ; he is crucified between the necessity of having a "scatter" and that of being able to justify his standards by some reasonable criterion. It may be doubted whether the selectivity of a school under pressure to eliminate is wholesome. It is certain that such benefits as it confers are obtained at an immense sacrifice of human values. It is certain, too, that pressure to eliminate makes teaching dry and factual, over-organized, and full of artificial barriers. All this is dead ; real learning is alive." (1)

Waller's recommendations for renewal sound very up to date :

"...education that works from without...does not work...we do not not believe that habit is the fundamental motor of human life. Rather do we see human behaviour as ensuing from an intricate and subtle, self-directed, self-regulated process

1) Ibid., pp. 25-27.

of a dynamic interchange between the individual and the situation with which he is confronted. The tension points which develop in this system of interchange are the springs of action. (1)

This is Waller's Deweyan psychology. As a sociologist, he insisted that the school was an intricate social system of which informal primary groups - both teachers' and pupils' - were a key component. He believed that education had to make use of these primary groups :

"It would hardly be correct to say that children would be free under such a system. They would be living in a natural social order, and would be subjected to the painless leadership of such a situation, but they would not be free, for this sort of leadership that we have in mind is the most compelling of all, and partly because it is gladly borne. Children would be relatively free of obvious and external restraint. The pressure which they would feel is the pressure of the social situation. (It is this soft but overwhelming pressure, not habit, that keeps adults moving in accustomed grooves.) It is the pressure of one's own needs in the social situation in which he lives. This kind of pressure in the group of children makes for advancement to the next grade in the series of stair-stepped primary groups. It is a pressure that is very powerful among children, and if it could be canalised in such a way as to make for achievement along accepted lines no school teacher would ever need to worry about discipline... Education through social situations can produce favourable results only in a natural social order. (This)... would require us to abandon the present type of institutionalised dominance and subordination in the schools," (2)

"A final suggestion concerns the training of teachers... The teacher's most important task is to deal with the dynamic social situation of the classroom. And it should be his objective to deal with the situation in such a way as to further the development of the personality values of the children who with the teacher make up that situation. A central point of the teacher's training, then, should be to give him insight

1) Ibid., p. 449.

2) Ibid., p. 452.

into the nature of the social reality which is the school." (1)

As we shall see below, these same conclusions were arrived at by graduate students, after field experience with open schooling in the late nineteen-sixties.

Nevertheless, while there is much in today's open education movement which is a revival of John Dewey's educational philosophy, there is also much which reflects the youthful counter-culture of the late sixties. The main themes of the counter-culture can be briefly summarized. It rejects advanced industrial society as a subtly totalitarian "technocracy" which absorbs protest through "repressive toleration" (Marcuse). The goals of life in this society are perceived as trivially materialistic. It also rejects the "achievement orientation" which it sees as finally ending in materialism. It rejects the "future orientation" which is connected with the achievement syndrome and emphasises, instead, the fullest living of the present moment. It rejects "scientism", and, indeed, sometimes science and scientific method, because they are judged guilty of having produced the materialistic industrial society. It rejects Puritanism - especially the emphasis on coerced work and on sexual restraint. It rejects competition as a social mechanism, and competitiveness as a personality trait. It verges on the anti-intellectual and anti-rational, since rational intellectualism is seen as deeply connected with "Western scientific method". These themes are found throughout the literature of the counter-culture. They are outlined in detail in Theodore Roszak, The Making of a Counter-Culture. (2)

The proponents of the counter-culture in America are white, upper-middle class youths, who have been raised according to the permissive orthodoxy. Until the recent United States recession, they have known nothing but ever-increasing economic prosperity. Anxiety about material security is no part of their consciousness. Somewhat unawares, they take for granted the freedom of movement and choice, which affluence confers. To a remarkable extent, they have been spared subjection to the unfreedoms which result from economic scarcity. They take as given a society in which the constraints of economic scarcity have, in principle, been overcome.

In place of what it rejects, the counter-culture celebrates the small community and its participatory democracy. Its proponents express their contempt for the material by their costumes

1) Ibid., p. 439.

2) Theodore Roszak, The Making of a Counter-Culture, Anchor Books, New York, 1949.

and surroundings. They believe in sexual freedom and in freedom from coerced labour. They rebel against authority in every institution, but especially in schools, where most of them spend most of their time.

As against scientific rationality, they celebrate religious traditions which emphasise mysticism and which promise nirvana through the dissolution of the ego. They experiment with the dissolution of the ego through the use of drugs.

It is the youths who espouse the counter-culture - or their children - who disproportionately make up the clientele of private "free schools" and open education schools in the United States.

Open schools are small and communitarian. Usually, every teacher knows each child by name, and first names are used in addressing each other, symbolising the equality of the generations and of teacher and student. An atmosphere of "creative disorder" prevails. Plenty of noise and free individual movement distinguish these schools from the traditional school, where noise is a sign of lack of control by the faculty, and where movement occurs in semi-military formations.

While free schools are not necessarily anti-intellectual, they do represent a protest against narrow academicism. Teachers are frequently selected for their mastery of an academic subject, plus some non-academic interest or hobby.

Free schools insist that there are other ways of learning than through books: one may learn by listening to lectures or discussions, or through manipulation of materials or through "activities". One free school director pointed out that not only many of the children but a few of the faculty in his school were "non-readers". In sharp contrast to traditional schools, they refuse to make reading the sine qua non of academic achievement.

In one respect open schools diverge sharply from the counter-culture. They tend to emphasise investigative activity carried on according to the norms of scientific method. However, they do embrace the view of the counter-culture that there is no possibility of separating intellectual activity from affect. Affective growth is for them an intrinsic part of education, inseparable from cognitive development. When asked what sort of learning theory they use as a guide, open school directors most often mention Piaget. They also mention Dewey, Froebel and Susan Isaacs. In the realm of emotional development they are influenced by Freudian and neo-Freudian ideas, such as the theories of Erik Erikson. Sociological theory, especially the theory of small-group dynamics, finds its

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way into the thinking of open school educators mainly by way of their interest in sensitivity-training. Occasionally a student of the open school, concerned with the problem of changing traditional schools to open ones, has found some guidelines in the sociological theory of complex organisations.

II

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THE ROLE OF THE TEACHER IN THE TRADITIONAL SCHOOL

The traditional school has five functions :

- The instructional function. It transmits knowledge and cognitive skills.
- The socialization function, It transmits norms and values of the society.
- The selection function (discusses above).
- The custodial function.
- The production of new knowledge. (This function belongs only to higher education.)

The teacher's role-partners are pupils, colleagues, administrators, parents and the community at large.

A. TEACHER-PUPIL RELATIONSHIP

Most of the teachers' role is performed in this relationship. In traditional schools the relationship is set in a self-enclosed classroom where the action is not visible to colleagues, parents, or even - except on occasion - to supervisors and administrators.

Classes in the traditional school are age-graded. Often there is some form of homogeneous ability-grouping. As Waller points out, the first requirement of the traditional school is that the teacher gain "control" of his class. He must establish his dominance. Rebellion, or at least some degree of alienation, is regarded as endemic in schools. It must be contained. Every schoolmaster's nightmare is "loss of control". The ideal student from the teacher's point of view, is docile and striving. Students who are apathetic, but still more those who openly flout the school's authority, are the enemy. Waller details many ways in which the teacher establishes control. One is to fill the school day with

routines which must be carefully followed - routines for entering and leaving the building and its classrooms ; routines for passing out and collecting materials ; for putting away and retrieving personal possessions and for "heading" papers done as homework or seatwork. Another way, of course, is through punishments and rewards. Rewards are privileges, such as being a monitor or messenger. Punishment includes public reprimand, isolation from the class and corporal punishment. Corporal punishment of a sub rosa kind occurs in the United States (where its open use is usually illegal), especially in lower class schools. In upper-middle class schools until the recent past, control has hardly been a problem, since students and their families are positively identified with the aims of the school. They perceive school success, both moral and academic, as prerequisite for maintaining or improving the child's future social class position. It is in lower class schools that the problem of control is most serious. (1)

The teacher's instructional activity in the traditional school consists in large part of talking and asking questions to which pupils are supposed to give the "correct answers". The teacher presents curriculum material and hears recitations. The curriculum is determined by a central authority with the teacher having more or less freedom to modify it.

One key aspect of the way the traditional teacher plays her role is that, unlike parents, she is universalistic. She judges all students impartially according to the same standard, not taking into consideration their personal situations. Student differences can be taken into account only in a universalistic fashion ; there may be special classes for the retarded, or the gifted, or the emotionally disturbed. Teachers strive to conform to the norm of universalism.

B. COLLEAGUE RELATIONSHIP

Where the self-enclosed classroom prevails, collegial relationships among teachers are almost non-existent. Teachers cannot directly observe each other performing their central tasks. There is little interaction about professional matters. Teacher interaction occurs in the interstices of the school day, during smokes

- 1) According to one student, Gerald Levy, in his book, Ghetto Schools Class Warfare in an Elementary School, (Pegasus, New York, 1970) control is the sole aim of the lower class school. Instruction is almost abandoned. The children rebel because they see the school as holding out a hope of upward mobility which is false and hypocritical so far as they are concerned.

in the teachers' lounge, in the lunchroom, on the playground and at the supply room. Teachers regard themselves as all equal in status. A major norm is solidarity with each other in the face of outside attack, especially by parents or pupils. Teachers may comfort a colleague who is upset. For instance, if a teacher is suffering remorse about her harsh behaviour to a pupil, they may exchange stories with her about their own past cruelties. (1)

Old guard teachers communicate to new, young teachers that they are expected to abandon their "unrealistic" innovative ideas, freshly brought from teachers' college, and that their "extra" class activities are regarded with the hostility with which factory workers regard rate-busting.

Traditional teachers, on the whole, do not share their classroom techniques. Imitating a successful technique of another teacher is seen as a confession of personal inadequacy. In fact, the relative absence of professional journals read by teachers, and written for and by them, and of professional associations which actively disseminate new ideas about methods, all testify to the well-known fact that teaching is not a fully professional occupation. The teacher shares many characteristics of the bureaucratic white collar employee; she is close to the bottom of the school system's authority structure, only the stratum of pupils is below her. Thus, teachers do not have the professional autonomy which would give rise to the usual organs of professional self-direction, mutual collegial evaluation, and professional control of the distribution of rewards.

C. TEACHER-SUPERVISOR RELATIONSHIP

The teacher's insulation from observability helps her to maintain such autonomy as she has. However, supervisors have a legitimate right to enter the classroom. From the teacher's point of view even this right is hedged. She should always have due notice as to when she will be observed. She should never be observed without her knowledge. The supervisor should make constructive and helpful comments and especially should try to give assistance when the teacher asks for it - but should not make negative critical comments, "because the supervisor sees me for only one hour and he cannot possibly judge my work on that slim basis". Teachers

1) cf. "The Role Set of the Elementary Teacher", Unpublished doctoral dissertation by Gertrude Huntington Wright MacPherson, Department of Sociology, Columbia University, 1966.

want two things from superiors. The more important one is protection against attack by parents and community groups. Teachers expect their supervisors invariably to defend them against those "outsiders". If the supervisor believes the teacher is in the wrong, he must tell her so privately, but he must continue to maintain to outsiders that she is right. If a principal does not do this, he suffers withdrawal of compliance with his orders by his staff.

The second demand is that for assistance. Teachers sometimes want their supervisors to help them solve problems of teaching and discipline. But they are ambivalent. Even attempts to help may be viewed by the teachers as undue interference. Unlike the British headmaster, the American principal is not primarily a head teacher ; he is primarily an administrator. Teachers want their principal to carry out administrative functions, such as getting them supplies, and they also want him to manage the public relations of the school so as to protect them from lay intrusions.

In the past ten years, there has been a surprisingly rapid unionisation among United States teachers, and an enormous rise in the number of teachers' strikes. The unions are concerned with salaries and working conditions and with professional problems it is not yet clear what effect they will have on the likelihood that the teachers' role can be made more professional.

D. TEACHER-PARENT RELATIONSHIP

"Teachers and parents are natural enemies". Both Waller and MacPherson make a point of this. The reason is not far to seek. The parent, to play his role properly, must regard his child particularistically. His child's personal interests come before all else. The teacher, on the other hand, must treat this same child universalistically ; she cannot give him privileges gauged to his special circumstances, but must treat him the same way she treats all others. On this point teacher and parent are in conflict, the more so the more each plays his role properly.

As an example, MacPherson reports a parent of a first grader demanding of the teacher that she give the child an 'A' on his report card. He needs the 'A' to bolster his self-confidence. She asks the teacher to change her mark. The teacher's refusal to do so is baffling to the mother. "No standards or rules outweigh my child's need". This is particularistic thinking and is appropriate for the good parent. The teacher, in contrast, asks how the child

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compares with other children. She cannot give the child an unearned 'A' without subverting the basic principle on which academic grades are distributed. She cannot see why the parent does not understand this.

There is a relationship between the social class position of the parents and the teacher's behaviour. If the parents' class position is higher than that of the school authorities, the school will be vulnerable to pressure with respect to the promotion of students or their placement in streamed ability groups. Where the parents' social class position is lower than that of the school's staff, the school is invulnerable to such challenges. Since there is a positive correlation between social class and both academic performance and "good behaviour", teachers and parents of middle class status usually get on fairly well. This is symbolized by the teachers' eternal plaint that it is the parents "we don't need to see" - because their children are doing well - who invariably come to scheduled parent-teacher conferences, while those "we do need to see" - because their children are academic and/or discipline problems - don't come. The latter group doesn't come because it is hostile to, intimidated by, or apathetic toward the school.

E. TEACHER-COMMUNITY RELATIONSHIPS

It is difficult to generalise about this aspect of the teacher's role because it is in flux today. Education is constitutionally a function of the states, and most states have delegated much of their authority over education to the cities and towns. That is, the lay board of education is very powerful in upper-middle class communities, where the parents' education is equal or superior to that of the schoolmen. On the other hand, several recent studies have pointed out that the professional schoolmen are able to subvert the power of the lay board of education, especially in big cities. This occurs because the boards of education have no expert staff of their own and are therefore helpless to implement their decisions. The school system bureaucracy does have an expert staff which provides the information necessary for making and implementing decisions. Thus, according to Marilyn Gittell, the middle level school officials of New York City were able to sabotage the Board of Education's repeated decisions to desegregate New York's schools because these decisions required detailed knowledge of available land, of appropriate siting of

schools so that they would draw pupils of both races, and so on. (1) As a result of the Board's lack of a loyal staff of experts and the school official's opposition, the decisions were never implemented.

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- 1) Marilyn Oittel, Participants and Participation, a Study of School Policy in New York City, New York, Center for Urban Education, 1967.

III

EFFECTS OF INNOVATION ON THE TEACHER'S ROLE

Against the background of this brief sketch of the role of the teacher in the traditional school, we shall now look at how several innovations change or modify that role. In this discussion, the descriptions of innovative schools will sometimes be based on my personal observation in two secondary and four elementary schools, sometimes on published descriptions and frequently on both.

A. MODULAR SCHEDULING IN A HIGH SCHOOL

Newport, Illinois, is a town of some 30,000 people located about eighty miles south of Chicago. It is a centre of dairy farming and the processing of dairy products and recently has begun to acquire a light industry. The town has an east side and a west side divided by a river. The black population, about 10 per cent of the total, lives for the most part on the east side, although some middle class blacks have crossed the river. The west side of town is also divided into neighbourhoods of different social class level: a neighbourhood of modest single family homes; a middle class neighbourhood with larger homes, yards, lawns and garages; and an upper-middle class neighbourhood of successful doctors and top business executives, where the homes and grounds are large enough to qualify as small estates.

The town has many churches, a hospital, and the usual government buildings, but its crowning glory is its school system. The elementary school has been a demonstration school with a large Title III grant for the past several years. The middle school, described below, was experimenting with team teaching. And the public high school with 1,640 students (there is also a Catholic school of some 300 students) is experimenting with a modular schedule. Newport is in the heartland of "middle America", supposedly

conservative, but its school system is permeated with a spirit of innovation.

1. What is Modular Scheduling ?

One thing which gradually became clear during three days at Newport High School is that the direct consequences of the modular schedule, while important, did not by themselves fully explain the many innovative features of the school. It would be possible to introduce a modular schedule without producing nearly the amount of change which has occurred in this one. The heart of the Newport innovation goes back to the main thesis of this paper : the objective is to give students more autonomy and to change as far as possible in a non-authoritarian direction. Another generalisation, illustrated in this school, can be set down here : what is done for students is also necessarily done for teachers. Where students are given more autonomy, teachers must also be given more autonomy. Conversely, where teachers are treated in authoritarian fashion by supervisors, they in turn are forced to treat students in authoritarian fashion.

A modular schedule (sometimes called an "individualised flexible schedule") is one which is divided into 20 or 30 minute periods called "modules" or "mods". At Newport the mods are twenty minutes long. A course can have class meetings as short as twenty minutes or as long as many multiple of twenty minutes up to eighty minutes. Depending on the needs of the course, it may have meetings of different lengths. For instance, the course might have one large-group meeting each week lasting 60 minutes. For the remaining two sessions, it might be broken down into groups of six or eight students who meet with a teacher twice during the week for twenty minutes. Units lasting less than a semester also can be and are scheduled.

Newport High School uses a computer at a nearby university to make its schedule. The computer must be given the courses, the required number of meetings and their length, the number of students to be present at each meeting and the number and size of classrooms in the school. With this information, it constructs the optimum schedule.

One consequence of flexible scheduling is an enormous increase in the number of courses which can be offered. Newport High School offers about 160. Another consequence is that students have many "unscheduled mods" as the administration calls them : the students call them "free mods". What is done with the "free mods" is a matter of student choice. Students could conceivably be required

to spend their free mods in study halls. However, at Newport High School there is no attempt to keep track of where every student is at every moment of the day. Students may attend classes or not ; attendance isn't required (though some teachers unsympathetic to the innovation require attendance de facto). During free mods students may go to the Commons, where they can get a snack, socialise and play cards. They may go to a "resource centre", such as the Math resource centre, the English resource centre or the Social Studies resource centre and do some work. There are always teachers in the resource centres who may be approached for individual help. Some of the teachers take the initiative by circulating around and asking students if they want help. In some of the centres, the furniture consists of round or rectangular tables with several chairs, so that students naturally form into groups and converse. Conversation is usually permitted so long as the noise level is not too high.

Another place students may go to during free mods is the science laboratories where they may work on experiments required for class, or on individual experiments which interest them and with which the teachers help them. Still other students go to one of the shops which are open all day long - power mechanics, wood-working, electronics - to work on class or individual projects. Again, there are teachers available to give individual help. The same is true of the typing laboratory and the language laboratories.

Some students leave school during their free mods. I received somewhat contradictory reports as to whether or not this is legal. Apparently, many students leave around the noontime hour to have lunch elsewhere. It is also true that a student may legally leave the school, after he has spent five hours there, if he has his parents' permission. There is student pressure for an "open campus" which would fully legalise their leaving the school building whenever they liked ; but there is community resistance to this.

One place students are not supposed to be, except when on their way to their next mod, is the hallway. However, there is a tendency for students to gather in the halls and to smoke there - which is forbidden. One of the Deans told me that it would probably be necessary to have a conference of faculty and students concerning the matter, and either the students would agree to enforce the hallway rules or they would decide that students should be allowed in the halls, "and I guess we will have to try it".

Individual teachers at Newport High constantly innovate and have the opportunity to try out their ideas - which then may be

adopted by their colleagues. Virtually every department in the high school has instituted some variant of an innovation which lets the student choose the goals of his course, and which shares the right of giving grades between the teacher and the student.

Apparently this innovation started with the power mechanics teacher. The student himself writes down a set of course objectives. He then goes over these goals with the teacher who advises him and may suggest modifications. When they have agreed on a set of goals, the next step is to evaluate what grade the accomplishment of those goals in a semester would be worth. The teacher may suggest that they would be worth a 'B', or a 'C', or an 'A'. This evaluation is also agreed on before the course begins. Then the student proceeds toward the set goals. It will be noted that a course of this sort is completely individualized. If the student achieves the goals, he receives the agreed grade. If he overshoots them or fails to reach them, his grade may be higher or lower. However, he is likely to know exactly why he received the grade he got.

In the power mechanics shop students also teach. There is a course - complete with directions for shop work, and photographs to illustrate the tasks - which was developed by students. It is used as a self-administered, programmed course by other students.

In a biology class the teacher laid out a series of different course goals, each having a grade attached to it. For instance, to make a 'D' in the course, the student had to have covered certain chapters in the text and answered the questions at the end of the chapters ; he had to have a notebook with adequate notes on a certain number of the large-group lectures ; he had to have done a certain number of labs. If these most basic things were done, the student received a 'D' ; if less was done, he received an 'F'. The goals required increasing amounts of work at rising levels of competence to get higher grades. A student decided at the beginning of the course what grade he was going to try for. The teacher pointed out that this took a good deal of the arbitrariness out of grading.

Like most teachers in this school, the biology teacher tapes his large-group lectures so that students who miss them, or who want to hear them again, can listen to them as many times as they like. Teachers claim that slow students benefit from being able to hear the lectures two or three times. They also point out that having to give a lecture only once makes it possible for them to prepare very carefully (they, too, have free mode for class

preparation). Under the old system, they claim, the fourth or fifth time they made a presentation they were apt to go flat and the students suffered. One English teacher said that large-group lectures had forced him to develop a technique of preparation he had never used before. When making a presentation to 28 or 30 students, he had just prepared sketchily and talked "off the cuff". But with 80 or 100 students he found it necessary to prepare a carefully and dramatically organized presentation because, "It's harder to hold the interest of such a large group". He imagined that his preparations were now more like those of college professors with very large lectures.

The device of having students work for self-selected grades is a version of individualized "pacing". The less able students need not try to cover as much material during a semester as the more able. The accounting course is organized in these respects like the biology course. The physics department has tried something different: they are letting students grade themselves. The purpose, they say, is to get the students' minds off the grades and on to the subject. Furthermore, they experimented with grading the students at the same time the students were doing their self-grading - and they claim that the differences were slight between teachers' and students' grades. The students gave themselves more 'B's' and fewer 'C's' than the teachers did.

One of the most striking aspects of the school was the atmosphere in the many small classes (ten or fewer students) which are made possible by the modular schedule. As all college teachers have noted, the smaller a class, the more informal it is. In a small class the teacher and students come to know each other more nearly in the round, and this makes it impossible to be quite so universalistic as one can be with a large lecture course. The atmosphere in the small classes at Newport High was relaxed. Relationships between teachers and students seemed warm. One teacher told me that the "traditional hostility" between teachers and students dissolves in these classes. There are no discipline problems. "The discipline problems have moved to the Commons and the hallways" These classes give room for much individual attention to each student and this was a major reason that students gave for liking them.

Another feature of the school is that there are frequent in-service workshops for the teachers.

On my last day at Newport High School, I circulated to the places where students gather during their free mode and held group

interviews. My standard opening question was to ask how they felt the modular schedule compared with the old system. Since the innovation was only in its second year, most of them had experienced the transition. Although I already knew from a questionnaire study the school had done that over 90 per cent of the students preferred the modular schedule, the interviews made clear that this majority breaks down into two groups. There are those students who like the modular schedule because it gives them more leisure, and there are those who like it because they feel it teaches them how to organise their time. A great many of the former group said they wanted an open campus so that they could get outdoors in warm weather, or go home and watch TV. The latter group said things like "It made my grades go up. You can study before exams ; you can do your homework just before class and then you get more out of the class. There are lots of new courses and you can do things that you want to do". "Now we have psychology and data processing which we never had before". One girl said that a group of about five students had asked for a fifth year of German and they had obtained it.

The minority of students who would like to go back to the old system are explicit about their need for external controls if they are going to do any work. One student said "The old system is better because we learned more then. You had to be in classes five days a week. Now you can goof off and you don't learn as much. Your grades go down. My grades are the same, but there's too much time when you have nothing to do. Like today, I have been in here (the resource centre) since 8:00. (It was then 10:35). And I have nothing to do. There are three days like that when I have hardly any courses. I get my homework done real fast and then there's nothing to do ; it's a waste of time". A girl sitting at the table said that he could be learning more if he wanted to use the time that way and he rather sheepishly said, "Yeah".

Two other things emerged on the third day. First, although, formally speaking, the high school has no tracking and schedules are individualised, the youngsters of lower socio-economic status track themselves into the shop, the industrial, the commercial and the other vocational courses. In some instances, the school itself has tracked a course ; e.g., there is "college-preparatory biology" or "general biology".

Secondly, it became clear that there were several student sub-cultures. A social studies teacher described them succinctly by laying out the ecology of the cafeteria at lunchtime. Over near

the windows are the "in" students, the college-preparatory juniors and seniors, and around their periphery are the 10th graders who hope to join them. These students come from the higher socio-economic levels ; they are getting good grades. The next group is the white, working-class students who are mostly in vocational curricula ; they will not go to college. Next to them, and sitting closest to the blacks, even occasionally joining them (though no black student ever joins a table of whites), is the small group of "flower children". Self-segregated at the far end of the cafeteria are the black students. There is a social class division among them. Some of them are middle class and college bound, while others are working-class and anti-academic.

The division of the student cultures is also seen during free mods. Most of the white working-class students and blacks go to the Commons where they eat, socialise and play cards - unless they leave school. The college prep students go to the academic resource centres, the science labs and the library, where they also socialise a lot and, sometimes, work. The college prep students call the Commons "the zoo" and the students in the Commons call the resource centres "the country club". Members of each group give unflattering accounts of the other and vow they wouldn't be found dead in the wrong place during a free mod.

The pressure of peer group norms was described by some teachers. A physics teacher, for instance, mentioned a girl, an 'A' student, who suddenly dropped to 'C's'. He called her in to ask what was wrong, but she wouldn't say anything. Finally, she began to cry and said it was social death in her clique to be a "brain" and that was what the others had been calling her.

The most interesting thing about the student culture was not that it existed, but that the top administrators of the school denied its existence. They said the school was "individualised" and that they were dealing with individuals, not groups. This is not surprising if one thinks about the literature of "individualised instruction". It is written as though there were two choices : teaching formally organised classes or teaching individuals. The sociological commonplace that there are always informal primary groups within a formal organisation, and that these have an impact on the goals of the organisation, is simply unnoted in this literature. We shall see below that the informal peer groups of children take on peculiar importance in the open classroom.

The Newport High School is unusual in that it has some hard data concerning the early effects of the modular schedule on

academic performance and on attitudes. On 24th April, 1969, six areas of the Iowa Test of Educational Development were given to sophomores. At that time Newport Senior High School was on a traditional schedule. The modular schedule was initiated in September 1969, and in November 1970 the same group of students, who by then had become seniors, were given the test again. The following comparisons result :

	<u>National percentile</u>	
	<u>29/4/69</u>	<u>20/11/70</u>
1. Social Studies	50	57
2. Natural Science	50	62
3. Language-Usage	54	67
4. Mathematics	62	66
5. Vocabulary	57	69
6. Use of sources	59	54

The students improved their achievement over the period studied. Grades given by the teachers in the school, however, behaved somewhat differently. At first they declined sharply, and they gradually went back up to their former levels.

On an attitude questionnaire, 96 per cent of students were against returning to the traditional schedule ; 90.4 per cent were in favour of an open campus. About 76 per cent said they did their homework assignments at school and the remainder did them at home. These percentages are based on 1,060 respondents.

There were only 933 respondents to the second half of the questionnaire study. As to whether there was "more", "less", or "the same" amount of school work under modular scheduling, the proportion of students answering "more" and "the same" was about equal ; a minority answered "less". Five hundred and ninety-three students thought there was a closer student-teacher relationship under modular scheduling and the remainder disagreed. A majority of students thought they were learning the same amount or more under modular scheduling, and a minority thought they were learning less than under the traditional schedule. When asked where they spent their free mods, the students distributed their answers as follows (some clearly made more than one choice) :

193 Lab
650 Resource centres
186 Commons
49 Study Hall
190 Other.

This suggests that the resource centres were much more used than the Commons. I do not know whether this would accord with daily observation, or whether the students were somewhat inclined to exaggerate their engagement in the more "approved" activity. Even if they were exaggerating somewhat, the results still suggest that the academic resources were more patronised than the Commons. One reason for this may be that the Commons has a limited capacity to seat students. When I saw it, it was packed. Also, the fact that students are in resource centres does not mean that they are engaging in any intellectual activity. These centres are a focus of social activity as well.

2. The Process of Innovating at Newport

The innovation of modular scheduling at Newport began when the principal of the school attended a workshop in California, where he heard about it and was impressed by its possibilities. Later he sent several teachers and an assistant principal to a workshop in Chicago where they, too, were converted to the idea. They came back and spoke to the rest of the faculty, who were sufficiently interested to want to try it. The change was two years in preparation. The local school board approved it, but with the proviso that it must cost nothing over and above the usual costs of running the high school. Unlike most innovations, this one was carried through with no additional financial resources.

The innovation is still in process. Staff and students agreed that the first year was extremely difficult. The students said that at first they went wild with their new freedom and kept expecting the administration to withdraw it, to revert to the old schedule. After repeated testing, they became convinced that that was not going to happen, and they "settled down" to the business of learning how to handle the new situation.

In addition to this kind of student resistance to change, there was some faculty and some community resistance. Members of the faculty who do not like the change find small ways to keep the situation the way it used to be - for instance, enforcing silence and individual isolation in a resource centre, or being very hard on youngsters who arrive late to class.

The community is particularly opposed to the open campus which the students overwhelmingly endorse. The principal, too, is in favour of an open campus, but his conception of it is something like the "school without walls". He wants to use the community for educational purposes. However, he says it will be necessary

to move very slowly in this direction since, at the moment, it has hardly any support.

The fact that the community has refused to provide extra resources for the innovating high school has had some serious effects. The resource centres are very short of resources. In the social studies centre, there are not nearly the number and variety of books which the faculty and students feel are necessary. Both complain that "there is nothing here", and this is part of the reason that some students do not find enough to do during their free mode.

Newport's innovation has changed the role of the student and therefore the role of the teacher. Perhaps the most salient change is that teachers are free to make their own innovations within the framework of the modular schedule. They try them out, and share them with colleagues, who often adopt them if they seem to work. This is a move in the direction of true professionalisation for the teacher. He has more autonomy and more professional collegiality.

Like students, teachers have free mode. Time for preparing class presentations, particularly large-group presentations, is built into their school day. This is unusual, for many schools keep the teacher in front of a class virtually the whole school day, forcing him to do his preparations at home. Like students, teachers enjoy the small classes which have encouraged more affective involvement of teachers with students and vice versa.

The schedule also exposes the teachers to a kind of visibility which is new and which tests them in a new way. Since students are free to cut classes, the teacher has to have a course that really interests them. If they don't attend, everyone knows about it.

Which teachers the students like, and which they don't, is also visible. One teacher told me that the idea that students used the resource centres to get individual instruction was "baloney". His desk was right there in a resource centre and not once during the semester had a student come to him for help. Another teacher said "We all have our shadows who follow us around and identify very strongly with us. And we have kids swarming all over us all the time. Sometimes you wish there was a place to hide."

The principal and assistant principal complained that there are no accessible consultants to whom they can turn for help. According to them, the nearby teacher-training institutions for the most part have not caught up with them. They are still training teachers for traditional schools and cannot provide much expertise concerning the problems that Newport High School is facing.

B. TEAM TEACHING IN A MIDDLE SCHOOL.

While Newport Senior High School has grades 10, 11, and 12, the Walt Whitman Middle School in Newport has grades 6, 7 and 8. Ninth grade students must at present transfer to the other middle school for the ninth grade before they go on to senior high.

The Walt Whitman Middle School opened in the fall of 1969. I observed it in the early spring of 1971. It had 950 pupils and 52 teachers. There are four community aides who do clerical work for the teachers and there are a few specialist teachers who come in about once a week each : a music teacher, a speech therapist and a school psychologist. In addition, the school also has two full-time guidance counsellors.

There has been a good deal of controversy about the school building. Its educational specifications were written by the principal and a group of teachers. They designed an open-space building without corridors. It has two wings on either side of a core which is supposed to be an instructional materials centre but at the moment seems more like a conventional library. When classes change, children walk through this centre, but no one, it is claimed, is disturbed. The librarian felt otherwise.

The original design of the building was more open than it is now. The plan was to have open storage spaces for students' personal belongings, but because the community feared the dangers of theft, lockers were provided instead, and these now act as room dividers.

Walt Whitman's chief innovation is team teaching. According to one of the definitive works on the subject, there are three kinds of teams : the interdisciplinary team ; the single discipline team ; and the school within a school : that is, the team which represents all the specialities of the school faculty in miniature so that a large school can be divided into small "houses". Usually the school-within-a-school remains together for several years. Its purpose is to provide the advantages of large size and small size at the same time.

The Walt Whitman School has the first two types of team only. The most prominent interdisciplinary team is a humanities team with six members. It has a literature teacher, an art teacher, a drama teacher, a music teacher, a German teacher, and a home economics teacher. The team originated with the music teacher who got her idea from a personal friend at a nearby university. She persuaded her five colleagues that the idea of a humanities team which

would teach all the arts in an integral way, made relevant to students, was a good one. This team maintains close contact with its university mentor. The members visit him at the university where they spend three days at a time working on new possibilities for their work.

While all the teams in the school have in-school planning time, the humanities team, in addition, meets two evenings a week on their own time. To do this they had to get permission from the Newport Educational Association which is a teachers' union. There are some teachers in the school who resent these out-of-school meetings of the humanities team as a form of rate-busting.

There is no formal hierarchy in the team structure, but there is some informal difference in the prestige and influence of team members. The two youngest members of the team, who are new to teaching, are the least influential. Among the other members, dominance is a matter of personality rather than seniority.

At the time I was observing, the humanities team was planning to have its students produce three television shows. (There were other options for students who might not want to participate in this project. One was to do a documentary with slides and commentary.) The television project was first introduced to their large group meeting of about one hundred youngsters by a visitor from a local television station. He told the students something about television production techniques. On the day I visited, the team was planning to demonstrate further to the large group something about the capacities of television production equipment.

One of the teachers asked if the students had observed the television camera. She said, "You've seen it ; you have seen people on camera ; you've seen how much space you can see through it ; you've seen how you can zoom in for close-ups, pan and so on. About how many characters do you think you can have on camera at one time in your television play ?" She got estimates from two to ten and said, "All right, then you're not going to do mob scenes". Then she asked, "About how many people do you think should collaborate in writing the play ?" The students thought maybe three. Then she said, "You are going to have some people writing commercials". A student suggested that they needed a station announcement. After a good deal of discussion of the various tasks involved in producing a television show, the instructor asked the students to go home and think of an idea for a television play and come in tomorrow with one. Tomorrow they would break up into three groups and decide whose story they wanted to do, and who would be

the writers, the cameramen, the actors, the director, the make-up men, the commercial writers, and so on. After the labour was divided, these smaller groups would meet to work on their specific tasks.

The humanities team has previously done other kinds of things. They have studied the Baroque arts - including music, painting, and literature - and their interrelationships. In some of their "units", cooking and home decoration have played a part and have been treated as arts.

The labour is not sharply divided by disciplines. All the teachers have opportunities to lecture to the large group and also to deal with the small more student-centred groups. The team members claimed that they learned teaching techniques from each other and also learned something of each others' disciplines. There are day to day disagreements, but on the whole the team seemed to enjoy the collaboration.

In the sixth grade at the Walt Whitman School there are two teams : In one of them each member teaches only his own discipline. In the other the teachers work together, each of them doing some of nearly everything.

When I visited the first sixth grade team, the large room, divided by partitions which did not reach to the ceiling, housed a group doing language arts, another doing math, and another doing social studies. When the bell rang, the groups shifted into different sections and each teacher went on teaching her own subject. Each of them does this all day. The lessons I observed were quite traditional.

An interesting feature of the school is that students meet once a week in groups of about ten with a guidance counsellor to talk about virtually any topic of their own choosing. The guidance counsellor told the first group I observed that last year students had listed topics they wanted to discuss. In order of number of votes they were : school rules ; teachers ; boy/girl relationships and sex ; race discrimination ; grades ; and community problems. The first group said they would like to talk about teachers. They asked who chooses teachers ; how much money did the teachers make ; who decided how much money they would make. The guidance counsellor answered all these questions. Then the students wanted to know, "Why can't students have something to say about who the teachers should be ?" The counsellor wanted to know why they asked that question and one boy volunteered that his brother in high school had a teacher who didn't do much teaching. Sometimes he just

dismissed the class and said he was going for a cup of coffee.
End of session.

An important feature of the teams in the Whitman school is that they are self-chosen. No teacher has been "assigned" to a team. If team teaching became universal, assignment would be unavoidable and that would surely introduce all the problems of personality conflict and conflicts in philosophy, requiring, perhaps, that the team have a formal authority structure.

Team teaching increases sharply the amount of professional communication among teachers. Not only must they plan together, but their joint effort is a topic of much interchange outside of formal planning sessions.

The morale of the teachers in the Whitman School appeared to be high, but it is difficult to know to what this should be attributed. The teachers at present in the school all chose to come to it on the basis of the promise they felt it had. The self-chosen teams add a sociability to the teacher's work which is enjoyable. And, finally, the good morale may have less to do with the specific innovation of team teaching than with the increment in teacher and student autonomy throughout the school system of Newport.

C. THE "CONTINUOUS LEARNING PROGRAMME" AT MEADOWBROOK JUNIOR HIGH (1)

Newton, Massachusetts, is an upper middle-class suburb famous for its progressive and superior school system. The town has long had a partnership with the Harvard Graduate School of Education for purposes of research and the improvement of educational practice.

In 1962, the Meadowbrook Junior High School in Newton began an experiment with a "Continuous Learning Programme".

"CLP attempts to develop in students a belief that they are agents of their own behavior, that they control what happens to them. Also the CLP attempts to stimulate students to think creatively, act imaginatively and reach unique solutions."

The goals of the programme were implemented by changes.

1) Most of this section is quoted or paraphrased from an unpublished paper, "The Effect of the Continuous Learning Programme at Meadowbrook Junior High on Subsequent Performance in High School", by Dora Zelnicker, Alfred Aischuler, and David C. McClelland, Harvard University, undated.

"...there are four Units containing children of all ages, ability levels, and interests. Six House Advisors and a Guidance Counsellor make up a Unit Team whose function is to devise the teaching techniques and materials they feel will best meet the needs of the students. Weekly meetings of the Unit Team are held to pool the resources of the team members, thereby allowing them to understand each student and make appropriate plans to help them.

"Each House meets four times weekly with its House Advisors (teachers) giving the Advisors an opportunity for... frequent conferences with individual students (as well as) group activity. The House provides the student with time and place for assistance in choosing courses, making schedules, defining his goals, and evaluating himself in terms of them.

"...CLP...provides the opportunity for students to select, within certain limits, the curriculum they will follow. Within the areas of literature, social studies, and science... the student is free to choose from among the eight to ten courses offered... The student's choice is limited...by the level of difficulty of the course, by his Advisor's suggestions, and by more subtle influences like the quality of the teacher or the peer pressure to 'travel together'.

"...The CLP student...having agreed to the explicitly stated goals of the course...is allowed...freedom in fulfilling his objectives. Unlike students in the traditional programme (TL-Traditional Learning), the CLP student himself decides what material will be covered, in which sequence, and within what amount of time. Students are bound to their decision by a system of Contracts, a student-teacher agreement explicitly stating the conditions of work. For example, a student might undertake to complete three self-selected books and an essay within three weeks in his Russian literature course. Having discussed the terms with the teacher, they both sign the written contract. Upon completion of the task, the contract is approved and commented upon by the teacher. Remarks are limited to the quality of the individual contract submitted, rather than to a comparative evaluation in terms of a class standard...

"The CLP student is allowed one hour of unscheduled time per day during which he may participate in one of several activities. Alternatives include consultations with House Advisors, catching up on work at the library, or pursuing individual interests at one of several resource laboratories.

Although not formally stated, students may opt to spend their free time in conversation with friends.

"The CLP students are evaluated in a variety of ways. The contract system provides one form...whereby assignments are judged in relation to the expectations set by teacher and student in advance. It is difficult to determine whether the standards for evaluation are more a reflection of the teacher's expectations of a student, the student's expectations for himself, or whether it is, in fact, a combination of the two. However, the standards are not fixed and common to all students as is the case with most grading systems.

"A second form of evaluation...is the Test Profile. This form attempts to rate the student's achievement relative to his ability as measured by a series of ability and aptitude tests...comments by teachers indicate to parents and students whether the student is performing below, above, or in direct proportion to his tested abilities.

"A third form of evaluation...is a predictive grade given by each of their teachers for the subject areas and 'track' the students have chosen for the 10th grade year. Under this system, an average ability student might receive 'A' predictions for each of his subjects if he elected to enroll in the low ability track in high school, whereas he might obtain a predominance of 'B's' and 'C's' if he decided to choose the highest ability track... In other words, 'effort' is more important in the CLP than reaching a high level of attainment measured against fixed and public standards. With this de-emphasis on 'standards', there is the increased emphasis on having 'each student learn how to take charge of the development of his own potential and understand that only he is responsible for his learning'."

The remainder of this article reports an experiment in which the 300 students who entered 7th grade in the Fall of 1963 were randomly assigned, half to CLP and half to TL. From these two sets of students, 42 pairs - 36 boys and 48 girls - were selected to match on sex, age, Otis intelligence scores and, to some extent, scholastic aptitude. The two sets of students were then studied at the end of the 11th and 12th grades at Newton South High School to which they had graduated. Only five of the students were unavailable at the end of the 11th and four at the end of 12th grade.

The experimental and control groups were compared on SAT verbal and math scores ; grade point averages ; final grades in

English in the senior year ; final grades in math in the senior year ; mean class rank in the senior year ; and their achievement of high elected offices or class honours in both 11th and 12th years. Wherever there were statistically significant differences, they favoured the CLP students. Differences reached statistical significance only for boys, but the trends for girls were consistently in the same direction.

The authors were interested not only in the fact that students in the CLP programme in junior high school subsequently did better in high school than students in TL ; they also wanted to understand why this was so. A number of tests of motivation, attitude and creativity given at the end of 8th and 9th grades showed no differences. However, an analysis of the TAT test given at that time seemed to show a difference in story themes which pointed to a greater sense of "internal control" among CLP students, whereas the TL students were more likely to feel "externally controlled". This variable is related to the "fate control" score which was shown in the Coleman report to be highly correlated with academic performance. In this study, too, regardless of whether they were in the experimental group or the control group, the students high on internal control did better in high school than those who were lower on it.

The authors are cautious in drawing conclusions since the sample is small and the population from which it is drawn is of a particular kind ; it is upper-middle class and above average in intelligence.

The selection function of the teacher is eliminated under CLP as practised at Meadowbrook. Instead of comparing students with each other and sorting them into superior, average and less than average, the teachers compare the student with himself. There is an attempt to determine whether a student is under-achieving, achieving at capacity or over-achieving. In high school, too, the students choose courses at one of several "tracks" (levels of difficulty) and this choice is their own. The teachers predict only what grade the student should get in the course, at the level of difficulty he has chosen given his ability.

Unfortunately, the article does not tell us how the change in the evaluation aspect of the teacher's role affects student-teacher relationships. Competitive evaluation is still present in the form of the ability tests which sort students into categories of academic talent as effectively as grades could do, perhaps more effectively. The difference would seem to be that the villain is now the test and not the teacher.

Consequently, the published materials are useful mainly as a source for drawing out the implicit ideologies of Open Education ; its implicit learning theory ; its normative account of the teacher's role ; its epistemology ; and its ethic.

D. OPEN EDUCATION

The organisation of this section is as follows : first, I shall try to give the reader some sense of what an open school is like by drawing on my own observations. Secondly, I shall outline what Nathbone has called the "implicit ideologies" of Open Education, drawing on his and Roland Barth's theses on the topic. And finally, I shall draw on participant-observer analyses of two experiments with the Open Classroom in public schools by Harvard graduate students of Education. In both these experiments the outcomes were different from what had been anticipated and the participant-observers, retrospectively analysing their experiences, have brought out some aspects of open classrooms which are not dealt with elsewhere.

Some Open Schools in New England

a) The Storehouse Co-operative School

The Storehouse Co-operative School in Massachusetts is appropriately labelled a "free school" since it is in several respects more radical than the open school model. It has 60 children ranging from pre-school age to 18 years. There are 8 full-time teachers and 4 interns. Student volunteers from nearby universities who come in once or twice weekly to conduct classes, and a good deal of teaching is done by parents. The school is co-operative. Parents pay part of the tuition by contributing some kind of work to it - and it is owned collectively by the parents. The tuition is \$1,900 a year. Classes are not age-graded : children three and four years apart in age may be found in the same classes. Despite a sliding scale of tuition, the school is clearly middle class.

The founders of the Storehouse School originally wanted a large, unpartitioned space to house it. They had found a rough equivalent in the basement of a church. There is a large rectangular room at the centre, surrounded by a corridor off which there are rooms used for classes, offices and a library. The central room contains the children's individual, private "spaces". These

vary in size according to the age of the youngsters but they are generally large enough for one or two children to sit in, along with some belongings. The spaces are built of plywood and cardboard and decorated with curtains, paintings and hangings. Each child decorates his own space and keeps his own things there. The space belongs to the child. No one enters it without his invitation.

These spaces express a major theme of the school : a pupil at the Storehouse School may retire to his private space any time he wants to, making himself inaccessible to adult authority and peer group pressure. There are few schools which accord their students such a degree of optional privacy.

The central room also contains a small woodworking shop ; a space where art and cooking classes are held ; a science "laboratory" ; a ping-pong table ; a basket-ball net and some chairs and couches out in the open where groups socialise publicly.

The Storehouse School is not rich. A good deal of its equipment is homemade or collected from the scraps and waste of nearby businesses and industries. In part, the preference for such material is partly ideological. It is part of the Leicestershire doctrine that simple, even crude collected materials are frequently better than elaborate bought materials because they are malleable. They may be used for any number of purposes which occur to the children, whereas bought equipment is likely to be "programmed" for use according to some preconceived plan.

However, the Storehouse School's shortage of equipment was not entirely ideological. A science teacher complained that he was severely limited in what he could do by the lack of certain simple equipment. A cooking class I observed degenerated into a waste of time since there was only one pot in which the children could make their french fries, and they had to line up and wait quite a long while for their turn to use it.

On a bulletin board in the big central room are announcements of the classes being held : "Easy Math", "Higher Math", or "Not so Easy Math", "Learning to Read", "Reading", "Architecture", "Swimming", "Astrology", "Introductory Spanish", "Advanced Spanish", "French", "Politics", "History", "Yoga", "Psychology". These were all the class announcements which I found posted on the bulletin board on one morning. A key rule of the school is like the famous Summerhill rule : no child is required to attend class - neither any specific class nor any classes at all. The teachers are required to be present at the time and place where the class is

scheduled, but it is not unusual for no students to turn up. I saw this happen to a shop class, a science class and a French class. A system of this sort places a heavy burden of the teachers to make classes attractive to the particular kinds of pupils found in this school ; and on the pupils to take responsibility for the direction of their own schooling. When I asked the directors whether the youngest, especially, were up to such a responsibility, they explained that the matter was not left entirely to the children. They regularly introduced the children to new courses by having them attend the first few sessions before they allowed them to decide whether or not they would take them.

Another rule is that the school gives no marks. Students who wish may take achievement tests and have the scores recorded for use in applying to college or other institutions. Each teacher writes a narrative evaluation of each child at the end of the year and these are kept on record for transcripts. The school's methods for keeping track of the children's progress are the following : each child has a faculty advisor and has regular conferences with the advisor about all round progress - academic and social. Every afternoon at three, when classes have ended, the faculty meets to discuss school affairs. Often these meetings deal with the problems of a student. At the meeting I attended, a teacher mentioned that one student's mother wanted a report on what he was doing academically. The discussion went around the table. Most teachers reported that this boy attended their classes not at all or very sporadically. It emerged that he did not like to read, although he had received a very high score on a reading achievement test. He preferred to listen to lectures or discussions and he seemed to retain the contents of these better than most students. However, the consensus was that he had serious problems in his social relationship and he was devoting the year to working those out, with visible progress. Little more was said. A faculty member told me later that although meetings often did not arrive at a solution for a student's problems, the student usually improved after the discussion. Once sensitized to a child's problems, every faculty member made an effort to "help" in his own way.

I could discover no principle which governed the curriculum offerings. The Director told me there was only one child as old as eight in the school who had not learned to read, and that was an emotional problem. Nearly all of these children were destined to learn to read rapidly with little or no "teaching" in school. The pre-schoolers were impressively well-informed about all sorts

of subjects. Their vocabulary, and command of syntax and concepts, left no doubt as to their "reading readiness". In short, the Storehouse School can easily afford its "no coercion of class attendance" rule at the primary level. Its clientele will master the basic verbal and quantitative skills in any case.

There is a curriculum problem with respect to older students, however. A fourteen year old girl told me she was taking "Reading, Spanish and Cities". "Cities" was a course offered by a student volunteer. This is a very thin curriculum compared to that of the ordinary 8th or 9th grader, and I believe this situation - a thin curriculum - was prevalent throughout the upper school.

The instruction at Storehouse School is either individualised or small group instruction. The school is supposed to open at 8.30, but most of the children straggle in between 9.00 and 9.30. (Their attendance is somewhat casual, too). Early in the morning, many young children can be found in the Yellow Room. There are books. There is an IBM electric typewriter. There are counters and other materials for working with arithmetic problems. There are many crayon drawings of prehistoric animals, which were made by children in a science class. In this room, children had round cubicles where they kept their work books : records of the work they had done. A teacher, looking through a child's work books, can get a fair idea of the child's level of progress in various subjects. I attended one reading class where the children read parts in a play and did it with much skill and relish ; and a math class where they were playing a game similar to twenty questions.

The most striking aspect of the Storehouse School is its social atmosphere. All teachers, students, and administrators are on first-name terms. Boys wear their hair long, and girls wear theirs very long. Everyone comes to school in a costume which consists of pants, a top, and sneakers ; and these are frequently dirty and ragged. In general, the students affect a Hippie style of dress, although the pants and the old clothes have their practical side in a school where there is much messing about and horse-play. The teachers are as non-authoritarian as they can manage to be. Children tell the dirty jokes and use the obscenities typical for their age, but rather than doing this were adults cannot overhear, they do it openly in class without reproach. On one occasion, some children no more than eight to ten years old, sat on the couches in the big room smoking cigarettes, while they chatted among themselves and with teachers. The school makes efforts to inform children about the dangers to health in cigarette smoking, but it

would violate their principles to exert authority to prevent the use of cigarettes. Like other United States Schools, private and public, this one had an epidemic of marijuana use. The directors did not personally disapprove of it, but since it was illegal, and since violation of the law would damage the school, they expected students to refrain from using marijuana at school. So, as far as I could see, the students did refrain while they were on school property ; but some of the older ones left school and went to restaurants for lunch, and while at lunch they shared marijuana joints.

In order to say anything about the teacher's role at the Storehouse School, it is necessary to say something about the functions of the school. Storehouse has abdicated the selection function for the most part. Competitive comparisons of academic performance are rejected by this school.

I think it is also fair to say that the school minimised the instructional function. The students were in control of how much instruction they took, and, in general, they took less than they would have received in a school which did not offer the option of no attendance at classes.

The main function of the Storehouse Co-operative School was socialisation. Its most important characteristic for its clients was its atmosphere of extreme personal freedom. This socialisation style was congruent with the life-style of the families patronising the school.

Given the fact that selection and its accompanying evaluation activities are absent ; that instruction is de-emphasised ; and that this particular style of moral socialisation is the most important function of the Storehouse School for its clients ; what are the implications for the teacher's role ? On the technical side, the teacher's skill as an instructor is not important. On the affective one, the Storehouse teacher is expected to model the role of the adult in the counter-culture. Rather than being a high-achieving occupational specialist, he is a man who gives heavy weight in his life style to his leisure time interests. The fact that the majority of full-time staff members at Storehouse are men, and that in this school men teach the younger children as well as the older ones, is itself an important component of the subculture. It signifies that the care and teaching of young children are not devalued activities to be assigned to a "second" sex. This subculture is sexually egalitarian. It also subscribes to the statement made in the Plowden report that the best preparation for adulthood is that children live fully their lives as children. The

point is made even more strongly in some American writings on Open Education. Childhood is not a preparation at all. It is valuable in itself, and it should be present, not future-oriented. There is a self-conscious attempt to annihilate the "grimly puritanical deferred gratification pattern". Thus adults attempt to model themselves on children, at least as regards their capacity for spontaneous enjoyment. Self-discipline and planfulness are devalued. Creativity and seizing the gratifications of the moment are celebrated.

The teacher in such a school does not attempt to establish his dominance. He does not acquire authority from his office as a teacher. If he has any authority for the children, it must derive from qualities of his personality and from the superior knowledge and skill which sometimes come with age.

What becomes of the universalistic dimension of the teacher's role in a school like Storehouse? The teacher's universalism applies most especially to her evaluation function. In the traditional school, pupils are all evaluated by the same impartial standard. Not only that, evaluation is structured as a situation of scarce rewards. Pupils are in competition for high marks. Only a few can be at the top and some must be at the bottom of the grading curve. In Storehouse and in open education schools generally, evaluation has neither of these characteristics. There is no single criterion of good performance for all and rewards are not scarce. Universalistic competition has been abandoned.

One can go a step further and say that open education schools try to be particularistic. One of their crucial characteristics is their small size. The purpose of remaining small is that everyone in the school should know everyone else. The staff tries to treat each child in terms of his unique needs and strengths. It is assumed that every child should meet with 'success' in some terms. The role of the teacher is thus more like that of the parent and conflict between the universalistic teacher and particularistic parent, which occurs in traditional schools, should diminish.

b) The Massachusetts Friends' School

Massachusetts Friends, a Quaker School, is less radical than Storehouse. It is also richer. It is housed in an attractive, modern building of the type where indoors and outdoors are closely connected and it is surrounded by attractive grounds. There are 180 students who are organised into inter-age groupings: the 5's,

6's, and 7's ; the 8's, 9's, and 10's, and so on. Each group of about 30 pupils has two full-time and 2 part-time teachers, making a teacher-student ratio of about 1/10, not counting college student volunteer teachers. Next year, the number of students will go up to 210, and the teacher-student ratio will be somewhat lower, due to financial pressure. Tuition fees will range from \$1,100 for the younger students, to between \$1,700 and \$1,900 for the older. About 12 per cent of the students are black, and some of these are on full scholarship, while others pay full tuition. Fewer than 10 per cent of the students are Quakers.

Teachers for the school are recruited informally. About half of them have their own children attending there. One teacher reported that this caused many problems because, "The teachers know too much about some of the children and vice versa". Nearly all the teachers at Friends have the qualifications to be certified in the public school system, except for the foreign ones who mainly teach foreign languages.

The school is governed collectively by its staff. They make policy at faculty meetings conducted according to the principles of participatory democracy. Decisions are made by consensus, a long and wearying process. The headmaster is primus inter pares. He would like to be a head teacher, spending his time in classrooms, but his administrative, community relations, and fund-raising duties keep him from doing so. Thus, there is almost no supervision of the teaching. Teachers frequently attend workshops, however. It was through a workshop that Open Education got its start at the Friends. A teacher of the youngest pupils, who had many years of experience, one year found herself in difficulty. According to her, she had a class full of individualists. She attended a local workshop on the methods of the British infant schools, and decided to try this approach with her pupils. She worked on the approach all year, getting a lot of support from the headmaster. Then other teachers became interested and wanted to try it. It gradually spread through the lower school, and is beginning now to reach the upper grades, since the children who have been through the lower grades in an OE system find it hard to adjust to a more structured situation later on.

The 8's, 9's, and 10's, whom I observed, were located in three rooms with interconnecting doors. Every child has a cubicle of his own for storing his things. In one of the rooms, there was a structure consisting of two stories to which one could climb on a ladder. Each level was furnished with mattresses, cushions and

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books. It was a place for relaxing, socialising and reading. The walls of all three rooms were covered with problems, questions, results of experiments, statements of children's "6-week and 9-week projects", and children's art work.

The children were doing a variety of things. Some were working on some "hard" math puzzles that one of the teachers had invented the night before and brought in that morning. Others were playing with a little machine which opened to show a word or a number for a small fraction of a minute (the speed was variable) and the object was to see if you could read it in the time allowed. The children checked themselves. They were very absorbed in this, and watching them for a while, I learned that some of them have remarkable reading speeds for both words and numbers. Some children were painting, weaving, or making collages. Two girls were doing solid geometry with a volunteer teacher and a set of construction materials. Other children were playing mathematical games with blocks. Many were reading. One was sitting on the floor copying out her final report of a project on the Middle Ages. She was writing about guilds, their nature and structure.

At Friends, the children are given a series of options as to what they will do for each part of the day. The options for one period included math, folk dancing, reading and art. They must sign up for one of the options for each period. They are not given the choice of doing nothing. Nevertheless, some children may be seen wandering around purposelessly.

Every child's schedule is required to include a certain amount of reading and math. At the end of the day, each child records in a book what he did that day, and this is one way that teachers keep track of the children. In addition, the teachers have files of 3 x 5 cards on which they make notes about children : about their mastery of specific skills ; about their likes and dislikes ; about their personalities and interpersonal behaviour. Each group is taught by a team of teachers. The teams meet to discuss the children's progress. One exercise at such meetings is for each teacher to name each child she did and didn't interact with in the last few days. By doing this, the teachers find that some children are becoming "too dependent" on them, and others are avoiding them.

Parents have one scheduled conference a year with teachers, and they receive a narrative report of their children's progress twice a year. No grades are given. Either a teacher or a parent may initiate a conference at any time, and about half the children are the subjects of such additional conferences each year.

Friends is an informal school, but somewhat less so than Storehouse. Most teachers and pupils are on first-name terms, but some teachers were addressed as "Mrs." by the children. Everyone wore practical, informal clothes to school, but they were clean and patched. Some rules were strictly observed. For instance, the day begins with a period of silent meditation, and there is another such period just before lunch. There is also clean-up time at the end of the day, when the children are required to pick up after themselves and put the things they have been using away in their proper places. On some days they must, in addition, dust and straighten their cubicles. No child may participate in games after clean-up time until his share of the work is done.

The teachers on a team exchange a great deal of help and information. For instance a teacher to whom I spoke was expert in mathematics, whereas one of her team-mates was expert in reading. She said, "...we learn a lot from each other... She is fantastic with feeding me suggestions of books, because she knows the kids and their interests; she knows what level they are at, and she can usually suggest a book that will interest a child and that is at the level he needs. I, on the other hand, can help her if she is teaching math and something or other is not going well. I can usually help her by getting or inventing a math game that will get the point across to the child." Another advantage of teams, she said, is that sometimes a certain teacher and a certain child don't get along together, and then the child can be handed on to another teacher who may establish better rapport with him. I asked this teacher how she felt about the difference between team teaching and the self-enclosed classroom. She said, "Well, all of us have one hang-up in common, and that is that none of us can bear to have a colleague in a room when we are standing up there and teaching a formal class in the old-fashioned way. For some reason we just don't like any other adult to be there when we are doing that. I don't know why. It is embarrassment. It's the fact that it is harder to get the kids' attention in a situation like that, and having another adult there makes it harder still. Strangely enough, nobody minds the general in-and-out business that's built into the open classroom. We don't mind being overheard in our interaction with groups".

The teachers share ideas at lunch and in their coffee breaks. Because there are teams and an excellent teacher-pupil ratio, a teacher who needs to be absent for the afternoon has only to notify

the other teachers on her team and make some arrangement informally. There is reciprocity about this.

The teachers say that team teaching involves dissension, as well as mutual support, and resolving the disagreements causes strain and fatigue.

From these brief observations, what can we say of the teacher's role in the Massachusetts Friends' School? One element in it, not observed elsewhere, is that the teachers govern the school. More usually, private schools are governed by a board of trustees, in which parents have a great deal of say. Parents are usually very important in the day-to-day running of the school as well. This is true of most upper-middle class schools in the United States. (1) Perhaps, since half the teachers in this school had children in it as well, the difference is not so great as it seems.

Instruction is more important at Friends than at Storehouse. All of it is individualised or small group instruction. "Individualised" here does not refer just to pacing. There are schools with highly structured, programmed curricula which children are permitted to go through at their own pace. This is sometimes called "individualisation". At Friends, however, the curriculum itself is tailored, to some extent, to each child's needs. Every child is expected to learn a certain amount of mathematics; but the way he learns it may vary in accord with the modes of learning most congenial to him. It is possible to do this because of the intensive teacher-learning styles, and to find or create curriculum materials to suit them.

So far as socialisation is concerned, the Friends School does not seem to cater to as many "counter-culture" families as Storehouse, and this perhaps accounts for the absence of such a strong feeling of anti-Establishment protest in the school. Nor is the school as compulsively anti-authority as Storehouse. Teachers clearly do have authority which derives from their office, though they are not at all authoritarian in style. At the same time, I believe the Friends school has abandoned the norm of universalism

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- 1) Interestingly, one other open school where I did not observe but interviewed a director, had run afoul of this characteristic. The school had previously been staffed completely by English teachers and headmaster, all of them with experience in the British infant schools. They quickly found themselves in trouble in an American upper-middle class neighbourhood, partly because their academic standards were not demanding enough to suit the parents (they had taught lower-middle class children in England), and partly because they were totally unaccustomed to, and could not tolerate, the daily parental "interference" which is typical in United States upper middle-class suburbs, but absent in England.

and treats children particularistically, just as Storehouse does. It can do this because, like Storehouse, it has abdicated the function of comparatively evaluating the students' performance.

c) St. John's School

St. John's is a Catholic parochial school located in the largest Negro residential area in Bay City. Its immediate neighbour is a low-income housing project, from which it draws many of its pupils. The 200 pupils of the school are all black. A majority of the faculty is black as well. There are ten full-time teachers and fifteen additional adults on the staff part-time. A considerable portion of the full-time staff are nuns. They are impossible to distinguish from the lay staff, since they are called by their first names without the appellation "Sister", and they do not wear habits.

The headmistress of the school is a black nun. St. John's building's electricity and heating are paid for by the Bay City archdiocese ; but the archdiocese does not supply it with materials. For these it seeks contributions, often soliciting them from suburban parishes. According to the nuns on the staff, the school suffers the disapproval of the head of the Bay City parochial school system. On the other hand, it has had warm support from the left-wing Catholic groups.

While St. John's is the least "open" of the schools discussed in this section, it has probably travelled a longer distance from the point when its transition began than any of the others. Catholic parochial schools are traditionally strict in their discipline, and authoritative in their style. St. John's was no exception. Its year of transition to open classrooms was particularly difficult. The children's initial reaction to the relaxation of authoritative discipline was an outburst of fighting, destructiveness and stealing. The teachers' patience was sorely tried, but they stuck to their resolve not to be provoked into giving up. They felt that the second year had gone better. The problems were not over, however. A science teacher told me that she had to keep nearly all equipment locked up - contrary to the "open education" doctrine that equipment should be out where children will be tempted to investigate its possibilities. The children stole anything usable for some private purpose. Another teacher told a story about a child caught stealing, whose father was called in to school. The father refused to reproach his son, but said, on the contrary, that he stole because he was "deprived by society". In a social

studies class that I observed, some eight and nine year olds talked about how they stole things from department stores, and several said that they wanted to be robbers when they grew up, so they wouldn't have to work. The teacher's response was to point out that being a robber took a considerable amount of work.

The school building, located right next door to St. John's Church and the St. John's Mother House, has three stories and a basement, with four large rooms on each floor. The building is old, unattractive, and none too well heated. On the days I visited, some of the children kept their coats on in class. One of the nuns told me that the aesthetic deficiencies of the building has very little meaning for her, but that the children were quite sensitive to the fact that their physical environment was ugly. To them, she said, it signified their own lack of worth.

The general atmosphere of the school was informal. Children arrived in the morning by two's and three's, and went to their classrooms directly, without forming lines and marching through the corridors to them as they do in most Bay City public and parochial schools. The furniture was movable, and the children moved about freely as they worked - talking and socialising. They are quite restless physically, and the freedom to move about spontaneously seems to meet an important need. In one class I observed, after the children spent about 30 minutes working at lessons at their tables, the teacher announced "dancing" and put a jazz record on the phonograph.

The children in the lowest age group were working with teacher-made mimeographed work sheets of a conventional sort, matching simple words with pictures and doing introductory number problems. The work sheets are corrected by the teacher as they are completed, and they permit some individualisation of instruction: the teacher can note problems specific to each child, and the children can move through the sequence of tasks at their own pace.

In an intermediate language arts class, the teacher had used work sheets to diagnose the children's skills and had found that she had a very wide range. She was just beginning to introduce the idea of options to her class. She listed on the blackboard a set of options for the hour: the children could work with work-sheets; they could work with SRA readers; (1) they could choose a class library book to read; and certain youngsters were singled out to meet with her for a lesson. The children were having some

- 1) Science Research Associates. This is a well-known, popular set of semi-programmed readers.

difficulty choosing what to do, and fifteen minutes after the hour had started, many had not yet decided. The teacher was circulating around the room urging the undecided ones to make a choice. The idea was new to them, and for some was apparently difficult.

On another day, I was told that the children in this school have a great deal of trouble working constructively without adult supervision. Left to themselves, they tend to do no work and to become "discipline problems". At one meeting of the school, the children had requested that they be given more formal lessons and less independent work. Several teachers said that open education with this group of children would be impossible without two or three adults in every room of twenty-five or so children. In fact, the full-time teachers not infrequently found themselves "alone" with twenty-five children, since the teachers-in-training were present only a limited amount of time each week. Teachers complained that they had a very difficult time when they were alone with that many children. Their work pattern is like that of other open education teachers; they teach on an individual or small group basis. But unlike the teachers of middle class children, they cannot depend on the groups which are on their own to remain relatively organised and task-oriented.

In one class I attended which was held in a rather dark basement, a boy consistently disrupted the class by switching off the lights. A girl left the group and went to a platform where she was very visible, and where she put on a complex performance of dance, mime, and singing. The teacher spent half of her time trying to control these two. Children often fought, sometimes dangerously, threatening each other with pairs of sharp scissors or with hammers from the woodworking shop. Children skipped out of classrooms when the teacher's back was turned and went off where they pleased, leaving the teacher to wonder for an hour or more where they were. Clearly the teachers' reluctance to control the children tightly was seriously challenged by the children's inability to control themselves. The difference in general capacity for impulse control between these children and the middle class children of Storehouse and Massachusetts Friends makes the lives of teachers and children at St. John's quite different.

Teachers sometimes lost their tempers and shouted at children, but this did not affect the generally warm tone of the teacher-pupil relationships. The teachers smiled at children a great deal; expressed a lot of approval; were free with terms like "honey", "sweetheart", and "dear". Their liking for the children seemed

genuine. One of the teachers, in an interview, expressed to me the same doctrine I heard in other Open Education schools. The faculty wanted to foster an attitude of enquiry in the children ; they did not want to appear as authorities who had all the answers. They wanted the children to be honest about their feelings towards teachers and each other ; and in order for this to happen, teachers had to be honest about their feelings. When they got angry, they did not try to hide the fact ; but they tried, in orthodox middle class style, to make clear what action had angered them and to suggest that their anger did not imply rejection of the child.

St. John's does not give children grades - although some of the children have asked for them. Instead, the teachers keep records of the skills children have attempted and have or have not mastered, and they send home to the parents detailed narrative reports together, often, with suggestions for home activities which would be helpful to the child. The school has made no attempt to evaluate whether its academic effectiveness has changed for better or worse since the innovation. A faculty member told me that such an evaluation would be irrelevant, since their moral goals are more important than their academic ones. They are concerned about the children's extreme competitiveness - also a concern in upper middle-class schools - and would like to teach them to be more mutually tolerant and helpful.

Parents' responses to the school are varied. Numerous parents have taken their children out of the school because they disapprove of the "lax discipline". On the other hand, there is a waiting list of more than one hundred who would like to be admitted.

The graduates of St. John's have difficulty with the entrance examinations of the Bay City Catholic high schools, but one faculty member told me that this was because the children are not "test-wise" - they are not often tested except for diagnostic purposes - and because the tests are culturally biased. They contain vocabulary that these children do not encounter in their daily lives. However, the school's narrative evaluations are appreciated by the Catholic high schools, and its graduates have been able to gain admission on the whole.

Teachers at St. John's work in teams. There is a team for the primary level, the intermediate level and the advanced level. In general, the teams seem to divide their labour by subject matter. There are regular team meetings to discuss progress, and, according to some members of the faculty, these meetings are a source of tension. Teachers have equal status ; there is no

hierarchy within teams. Team members' work is mutually visible and the discussions proceed through an exchange of criticism which arouses defensiveness and hostility in some of the staff. Some staff members, however, are strongly united by bonds of mutual respect and love.

St. John's school has some serious problems. First, there is a severe shortage of materials because the school is very poor. It is difficult to carry out the doctrine of Open Education unless one can create an environment which is rich in suggestive materials for children to choose among and work with.

Another difficulty is that too much of the staff is part-time and under-trained. Some of the teachers-in-training are excellent, but some are very unskilled. One young woman, who invited me to observe an arithmetic lesson which she had prepared the night before, gave a group of five children an utterly confusing half hour. She wanted to teach them the place value of numbers. In order to do this, she had prepared two square peg boards and a number of rectangular plastic "counters" of different colours. She began by telling the children that each colour represented a certain amount of money: 10 cents, 25 cents, 50 cents. Then she distributed the counters. Both she and the children kept forgetting which counters represented how much money, so she had a child write the "key" on the blackboard. Then she told the children that the object of the game was to collect as much money as you could. This was the only rule she described. By the time the counters were all distributed and each child had the same number of each colour, the half hour was up. The teacher said she would return next week, and they would play the game. She confided to me that the counters were made so that only nine of them would fit on a peg, and when the child came to put the tenth counter on a peg, he would have to "carry" it into the next column. This was supposed to impress on them the necessity for "carrying" in addition and subtraction problems.

The importance of having teachers keep close track of the children's work was brought home to me, when I looked at a girl's arithmetic work book. It was filled with arithmetic problems which had been "completed" - all with wrong answers which were simply guesses. The girl had no idea of how to do any arithmetic beyond the addition of one place numbers.

Finally, St. John's was faced with the underlying problem of a clash between the culture of the school and the culture of the children's working class and lower class homes. These mainly two

social classes are authoritarian both in their cognitive and moral style. They do not encourage curiosity in children. They don't explicate commands with the reasons behind them. They respond to disobedience with physical punishment ; and discipline is often inconsistent. One wonders about the psychological situation of children who are caught between two such different moral climates.

In addition, many middle-class black parents are suspicious of educational innovation. They want the best of academic traditionalism for their children, because this is what has "worked" for successful whites.

Despite these problems, St John's at the time I observed it, was doing fairly well. There was no telling how it was performing academically, compared to its performance under a traditional regime, but so far as the school's atmosphere was concerned, it seemed successful. Certainly, it was not in the state of total chaos that some of Ray City's traditional public schools reached that same spring.

E. THE IMPLICIT IDEOLOGIES OF OPEN EDUCATION

Two Harvard graduate students, Roland S. Barth and Charles H. Rathbone, in their doctoral qualifying papers and dissertations, (1) have sought to make explicit the theory of learning and of knowledge, the ethic and the ideal teacher's role which are implied in the writings of Open Education proponents. This section draws almost exclusively on their work.

Barth outlines the assumptions of open educators concerning learning theory and knowledge as follows :

I. Assumptions about Children's Learning

"1. Motivation

Assumption 1 : Children are innately curious and display exploratory behaviour quite independent of adult intervention.

Assumption 2 : Exploratory behaviour is self-perpetuating.

1) Roland S. Barth, op. cit., and "Open Education : Assumptions and Rationale", Qualifying Paper, Harvard Graduate School of Education, April 1968 and Charles H. Rathbone, op. cit.

2. Conditions for Learning

- Assumption 3 :** The child will display natural exploratory behaviour if he is not threatened.
- Assumption 4 :** Confidence in self is highly related to capacity for learning and for making important choices affecting one's learning.
- Assumption 5 :** Active exploration in a rich environment, offering a wide array of manipulative materials, will facilitate children's learning.
- Assumption 6 :** Play is not distinguished from work as the predominant mode of learning in early childhood.
- Assumption 7 :** Children have both the competence and the right to make significant decisions concerning their own learning.
- Assumption 8 :** Children will be likely to learn if they are given considerable choice in the selection of the materials they wish to work with and in the selection of the questions they wish to pursue with respect to those materials.
- Assumption 9 :** Given the opportunity, children will choose to engage in activities which will be of high interest to them.

3. Social Learning

- Assumption 10:** When more than one child is interested in exploring the same problem or the same materials they will often choose to collaborate in some way.
- Assumption 11:** When a child learns something which is important to him he will wish to share it with others.

4. Intellectual Development

- Assumption 12:** Concept formation proceeds very slowly.
- Assumption 13:** Children learn and develop intellectually not only at their own rate, but in their own style.
- Assumption 14:** Children pass through similar stages of intellectual development... each in his own way, and at his own rate and in his own time.

Assumption 15 : Intellectual growth and development takes place through a sequence of concrete experiences followed by abstractions.

Assumption 16 : Verbal abstractions should follow direct experience with objects and ideas, not precede them or substitute for them.

5. Evaluation

Assumption 17 : The preferred source of verification for a child's solution to a problem comes through the materials he is working with.

Assumption 18 : Errors are necessarily a part of the learning process ; they are to be expected and even desired for they contain information essential for further learning.

Assumption 19 : Three qualities of a person's learning which can be carefully measured are not necessarily the most important.

Assumption 20 : Objective measures of performance may have a negative effect upon learning.

Assumption 21 : If an individual is involved in and having fun with an activity, learning is taking place. Evidence of this learning is best assessed intuitively, by direct observation.

Assumption 22 : The best way of evaluating the effect of the school experience on the child is to observe him over a long period of time.

Assumption 23 : The best measure of a child's work is his work.

II. Assumptions about Knowledge

Assumption 24 : The quality of being is more important than the quality of knowing ; knowledge is a means of education, not its end. The final test of an education is what a man is, not what he knows.

Assumption 25 : Knowledge is a function of one's personal integration of experience and therefore does not fall into neatly separate categories or "disciplines".

Assumption 26 : The structure of knowledge is personal and idiosyncratic, and a function of the synthesis of each individual's experience with the world.

Assumption 27 : It is questionable whether there is a minimum body of knowledge which is essential for everyone to know.

Assumption 28 : It is possible, even likely, that an individual may learn and possess knowledge of a phenomenon and yet be unable to display it publicly. Knowledge resides with the knower, not in its public expression.(1)

Rathbone explicates this model further :

"... the tiniest child (is) capable of :

- selecting which of several available experiences... he will ... work with...
- determining when it is time to shift from... an... activity to another...
- choosing which method to use and when... evaluating how successfully he has progressed ;
- establishing his own criteria for evaluation," (2)

He makes clear that open educators are "wary of too early verbalisation of concepts. They prefer manipulation of materials. They emphasise the child's involvement with things, because they feel involvement with people and verbalisation has been over-emphasised in the past".

A central tenet is that the child is the agent of his own learning. Open educators also hold that "knowledge is

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- 1) Barth, "Open Education : Assumptions and Rationale", Chapter 1;
 - 2) It is worth mentioning that the learning theories implicit in Open Education and programmed instruction are incompatible with each other. Open educators are severely critical of programmed instruction : "What is wrong with the programmer's art is that it puts the most essential motivation of learning, the exploratory, in a straight-jacket, and robs the learner of that autonomy which is his chief means of self education, reducing him to a state of passive obedience - or active rebellion. It purports to teach by a pattern in which nothing taught could ever have been discovered in the first place, and reduces human differences, qualitative and many-dimensional, to difference in the rate of climbing ladders." David Hawkins, "On Living in Trees", Unpublished speech, Boulder ; University of Colorado, 1964.

idiosyncratically formed, individually conceived, fundamentally individualistic. Theoretically no two people's knowledge can be the same unless their experience is identical." (1) The pedagogical consequence is that it is impossible to determine suitable criteria for assessing whether one person's knowledge is better than another person's. Open educators reject "coverage" in curricula, because that implies that knowledge can be sectioned into "subjects", which it cannot. And they deny that there is any inherently indispensable corpus of knowledge which every child should master. In fact, in England, Open Education has stressed the expressive arts : movement, dance, art, writing, music. It has also stressed maths and science. Rathbone says that applying the open educators' criteria, history as archeology would be "in" because it involves "messing about" with "things". But history as documentary research or book reading would qualify as non-knowledge. Maths is "in" because there are lots of manipulative mathematical materials for young children. On the other hand, "grammar, rhetoric, art history, or the theory of music" would be "out". They are too verbal.

Rathbone also discusses the "ethic" of Open Education.

"... (It) demands considerable freedom for the learner. The child is a moral being... with a right to select what he shall do and be obliged to preserve similar rights for others. The teacher may suggest - but if the child firmly decides against the teacher's suggestion, the teacher will respect this. The expectation of receiving respect for his wishes is the most important thing for the child... the child's natural tendency is to grow into a happy, healthy, well-functioning adult."

There is a great commitment to the estate of childhood itself, and it is because of this that Open Education values the "present moment" and downgrades a "future orientation". The Open Education classroom is

"... a place of trust and openness, where interpersonal defensiveness has nearly disappeared, where expression of feeling is encouraged by others and accepted by the group... people become more... receptive to honest observations of themselves... As communication about these things increases, so does mutual respect and, with both, a greater capacity for toleration of

1) Rathbone, dissertation cited, p. 72.

differences. The result is an increase in an individual's freedom to change if and when he finds change desirable... (1)

The school discourages competitiveness. Teachers are non-judgemental. Each child should be able to rely on an "unconditional positive regard".

F. ROMANCE AND REALITY : (2) TWO CASE STUDIES OF THE OPEN CLASSROOM

Two experiments with the open classroom, conducted as graduate projects by Harvard Education students, produced unexpected results, which were analysed in their dissertations. The first was "An attempt by seven Harvard Graduate School of Education white men (average age 24) to conduct open classrooms in the Beecher Kerr School Program". (3) Beecher Kerr was located in a town with a population of 165,000, and "equal percentages of Italians, Jews, Blacks and Protestants". The Beecher Kerr School itself was 67 per cent black and most of the pupils came from families on welfare. Barth says the open classroom experiment "was turned back into conventional authoritarian education in three months..."

"The efforts of the Harvard teachers were unsuccessful from the beginning. Following theory and intuition they allowed children to make decisions. But most children had limited capacity to attend to a task and attention became more difficult when many options were open to them. A rich environment of manipulative materials only made it less likely that a child could focus on any one.

"Children decided when to leave the room for a drink of water. They went to the lavatory without the traditional 'lav pass'. But with no restrictions from teachers the children ganged up by tens and twenties outside of the bathrooms and water fountains. A teacher would turn his back on a class to find only three or twenty-five youngsters left in the room when he turned around. Other teachers permitted work at the blackboard for children who didn't want to work at their seats. That ended in public antics and rude drawings.

1) *Op. cit.*, p. 87.

2) The title "Romance and Reality" is taken from Chapter III of Barth's dissertation in which he begins the presentation of his case study.

3) This is the case study section of Barth's dissertation.

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"A common pattern emerged. A teacher would introduce choice into a classroom situation. The children would use the situation to disrupt the classroom. The teacher would then withdraw the choice often punishing the child as well. Everyone concerned would then feel frustrated and resentful. Repetition of this cycle taught the teachers an important lesson quite contrary to open educators' assumptions about children : trust in children's capacity to make choices is not warranted and will be abused.

"As these children saw school only two conditions could exist : firm, authoritarian order or chaos... in their brief but intense experience it had always been one or the other. Associations with adults had been consistently stringent at best and cruelly erratic at worst, most children preferring the former... the open classroom was a strange, third alternative, closer to chaos than to order. These children were afraid of different experiences... School was frightening enough under familiar terms ; a major change in ground rules made it doubly terrifying...

"It is not surprising therefore, that the children... were merciless in their demands for teacher-imposed order ; or that they remained dependent upon adult control for any productive organized experience... Children's anger with teachers who would not or could not maintain rigid order and control had in it a large component of fear, as well as contempt. "The children's abuse of teachers, materials, and themselves presented an overriding priority : to get the children under control... Either the teacher did the controlling or no one did. It was only when the children began to feel a sense of control and stability (imposed from without) that learning became a possibility. Black parents saw this at once ; it took the younger white teachers longer." (1)

- 1) Barth, dissertation cited, p. 189. This passage invites comparison with the analysis made in Gerald Levy, op. cit. Levy also describes "control" as the aim of the teachers. He discusses "chronic teachers" who are old hands at licit and illicit means of maintaining control in a school which is lower class and black, and "acute teachers" who arrive at the school assuming that they are going to teach in permissive, suburban style. The "acute teachers" are systematically "destroyed" by the children who do not understand them and are perhaps frightened by the assumptions these teachers make and which they don't grasp. In any case the pupils find ways to torment the teachers until they give up and adopt the methods and aims of the "chronic teachers". Levy's analysis of the process whereby this occurs is brilliant. In his "ghetto school" control is not a condition for learning. It is the goal, and the only goal of the school. Instruction has been substantially abandoned.

"To an astonishing extent children controlled, manipulated and shaped teachers' behaviour toward authoritarianism. One of the Harvard teachers reluctantly adopted a new criterion for selecting materials : What will happen when this object is thrown across the room ? ... Open education wasn't working..." (1)

Barth next describes the reactions of black parents :

"Parents expected, wanted and demanded clear evidence that each child was under the teacher's control at all times. The only alternative, as the parents saw it, was that the children were out of control. ...Being certified (the teacher) knows what and how each child should learn. In short...the teacher is not merely one important agent of the child's learning, he is the only agent of the child's learning ; if the child will but respect and obey his teacher, he will learn. (2)

"Parents visiting the classrooms of the six teachers... were astonished and angered by what they saw ; children with their backs to the teacher playing with animals, games and each other ; teachers called by their first names... children swearing at other children ; spitballs being openly exchanged. ...Only one thing infuriated parents more than seeing their children behaving in these ways - seeing the teacher do nothing about it.

"Racial overtones emerged. The phrase, 'These teachers don't understand black children' was heard more and more often from parents and also from the black administrators. This meant... 'the young white teachers are condescending to our children ; they don't think they are capable of writing, spelling, figuring, or thinking, so they let them play with blocks and animals. What the children need is a tough black teacher who understands them and won't let them get away with these things.' " (3)

Finally the Harvard teachers met with resistance from the black administrators of the school, and vice versa.

"Confronted with demands for traditional practices from black authoritarian administrators, the six Harvard teachers found themselves in a situation they had neither anticipated nor

1) Barth, dissertation cited, p. 191.

2) Ibid., p. 196.

3) Ibid., p. 200.

were ready to deal with. On the one hand, they had been taught to love all blacks as people ; on the other hand, they had developed a pronounced hostility and distrust of authority figures... parents, professors or school administrators. Black authoritarianism defied their categorization system. What teachers saw as 'incompetent' behaviour could not be called 'incompetent' without either blacks or whites fearing that such accusations were based upon color of skin, not performance. (1)

"In addition... the Harvard people were almost compulsively honest... When they didn't respect a black administrator, they told him so... (2)

"The administrators were threatened, offended and alienated by the six teachers... first, these teachers gave no sign of the respect and obedience which the administrators had expected ; second, their unorthodox teaching practices violated parents' expectations... placing the administrators... in jeopardy... the administrators reacted first by excluding the open educators from the decision-making, then by... (preventing)... the teachers from gaining direct access to the parents ... also by withholding funds for and materials needed in the open classroom." (3)

The ultimate response of the Harvard teachers to this frustration was withdrawal. They resigned.

Barth ends his dissertation with two indictments. First, he draws a portrait of the "open education" teacher as unflattering as his earlier portrait of the traditional teacher :

"Open education attracts many who find the facilitator-of-learning mantle a comfortable cloak under which to hide - a place where they do not have to reveal themselves, to be assertive, ... directive. Many advocates of open education appear not to have resolved their own authority problems and are unwilling if not incapable, of being authorities themselves ... they identify with the children and see themselves as colleagues in the war against the oppressive administration and less enlightened teachers." (4)

1) Ibid., p. 213.

2) Ibid., p. 217.

3) Ibid., p. 219

4) Ibid., p. 193.

Secondly, he indicts teacher-training institutions which are not "realistic" :

"Those who would prepare teachers to change inner-city schools do an irresponsible disservice to the teachers, the students, the parents of the students and the schools unless they acknowledge certain realities : Teachers must be trained to teach as they will be expected to teach. Teachers, as part of their training experience must have ample opportunities to experience the problems of the real world for which they are being prepared. The training programs must provide... the political means with which to pursue ends, i.e., a sense of timing, strategy, patience, familiarity with the culture of the community and the skills to develop a power base necessary for both change and survival.

"These requisites are unpopular with teachers-in-training drawn to work in the ghetto because of the cloud of romanticism which surrounds an impossibly tough, demanding, discouraging situation. Yet when they find the... reality... is intolerably unpleasant, they are surprised and incapacitated.

"These requisites are equally unpopular with teacher-trainers." (1)

The serious question which is raised by open educators' experiences at St. John's and Beecher Kerr (2), is whether the assumptions they make about children in general are not specific to the upper-middle class, and perhaps only to a small section of it. The freedom of upper-middle class suburban and Open Education classrooms rests on the children's internalised impulse control. They have had independence training at home from an early age. The burdens and luxury of choice and autonomy are not alien to them when they encounter them in school.

As Barth points out, the permissiveness of the Harvard teachers was frightening to children who knew only two alternatives in their previous experience with adults : neglect or authoritarian control. As between these two, children prefer authoritarian control, since it at least offers them some protection in a world they know is dangerous for the inexperienced. The anti-authoritarian permissiveness of the teachers might have looked to these children like a lack of concern - the very opposite of what the teachers wished to communicate.

1) Ibid., p. 269.

2) And by the "acute teachers" in Levy's Ghetto School ; cf. reference p. 56.

There was also mutual misunderstanding between the teachers, who believed that working with manipulative materials must precede conceptualisation, and the black parents who perceived "messing about with materials" as a form of racist condescension.

However, the assumptions of Open Education may give rise to serious questions as applied to middle class children, too. Maurice Gibbons and Catherine Cobb experimented for a year with a 10th grade "open" English class in a New England high school. Gibbons concluded :

"Even when all the arguments about obstacles to our success have been argued, it must be said that we failed to develop an environment and teaching methods that made it possible for many of our students to work with satisfying and sustained productivity on their own and under the conditions of freedom as we defined them." (1)

The obstacles were obvious : a single open classroom embedded in a traditional school system has the cards stacked against it. Furthermore, the experiment was not wholly welcome to the other teachers and administrators of the school. Nonetheless, Gibbons attributes what he sees as their "failure" to three factors :

- The "Hollow Men" syndrome in the students.
- The intrinsic difficulty of maintaining flexibility in an open classroom.
- The powerful, uncontrolled social forces which gripped the class.

1. Hollow Men

Gibbons describes the first three days of the class - after materials had been disposed around the room and the students had been instructed to "Explore the possibilities you see around you and decide what you will do. If we can help in any way, ask us."

The students started out by lining up against the wall, boys separated from girls. They explored the room only at urging from

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- 1) Maurice Gibbons, "The Search for a Scheme of Individualized Schooling", unpublished thesis presented to the Faculty of the Harvard Graduate School of Education, 1969, p. 243. The quotations which follow are from this thesis. Miss Cobb's unpublished thesis "Autonomy and Anomie" which traces the careers of the most, and least successful students in this class is equally perceptive and important but a little less close to the concerns of this paper.

the teachers. If two chatting boys were asked by a teacher what they are going to do, they stopped talking and snatched up books as though they believed they had been doing something "wrong" in his eyes,

"We naively believed that students once free from the constraints of the regular program would leap into productive enterprise. We over-estimated the intensity of their interests, their ability, their latent concerns and the generalizability of their previous training. (Most of) our students... if left undisturbed would likely have done little or nothing." (1)

"I find a record of all but three or four saying at some time during the semester, 'I can't think of anything to do', 'I don't get ideas' or simply, 'I'm not interested in anything'... Theirs was the 'Hollow Men' syndrome : ...the shadow fell between the idea and the reality... those who decided to act often had difficulty deciding what to do. Those who decided what to do had difficulty establishing momentum. Those who finished often seemed to have difficulty establishing and meeting adequate standards. There were many exceptions, but they were exceptions. Students had undoubtedly learned a great deal in school, but the obvious schism between knowledge and self, between passive learning and active involvement should not go unnoticed." (2)

None of this is necessarily a condemnation of Open Education. It might rather reflect on conventional schooling. Still, it suggests the error of expecting some kind of innate creativity to spring to expression the moment open classroom conditions are created. It raises the possibility that most people would not prove to be very creative even if educated this way from the first.

2. "Flexibility" in the Classroom

"... many students were 'finding something to do' but were not developing an interest, were not achieving the first stage in our hierarchy of independent learning tasks. Rather, many seemed to be responding to the pressures upon them by reaching to successful experiences in previous classes... by making quick choices... or by selecting an apparently easy activity. The result was that many found themselves deep into a long

1) Ibid., p. 155.

2) Ibid., p. 219.

term project that could not sustain their interest or be very productive. This had far reaching side effects. While there was wide choice initially... the range of choices was sharply reduced by each... student decision... once they began an activity each subsequent step reduced the possible alternatives, simultaneously confining the possibilities for instruction... this experience emphasized how important an unrushed critical decision really is. Further, these groups finished at different times. Students were not only locked into a group for the duration of the activity, but could not count on having an alternative choice for alliances when they finished. This tended to fix groups and keep the isolates isolated, strengthening subcommunities but weakening the sense of a greater class community. Our flexible situation was not flexible at all. We were caught up in a rush of events that quickly channelled the class and our role in it." (1)

3. Social Forces in the Open Classroom

"The powerful social forces that gripped our class took me completely by surprise. Concentrating on individual programs, I had overlooked the fact that individuals still form a society in a classroom no matter how they are taught... to say merely that the tyranny of the peer group replaced the authority of the traditional teacher would be a gross oversimplification and not very helpful. At least four aspects of social relations threatened to undermine the outcome of our programs. Groups formed - everyone eventually needed a preferred associate even though it was on occasion someone they claimed to dislike and would not spend time with beyond the class. What would the characteristics and dynamics of these groups be? Would they be beneficial or detrimental. Students who left the room to work or who began activities in the room always seemed drawn back to the center of social activity. Period after period some were unable to escape from it; others tried to leap out but fell back. Students... were often inhibited in their working relationships with each other by their ignorance of ways to make social contacts, particularly group discussions, pleasant and productive. Friendship groups survived this, working groups often did not. Their inexperience made them reticent, inept and often rude in working with adults, sometimes so rude we couldn't believe it... Particularly they

1) Ibid., pp. 169-170.

seemed unable to take advantage of what the teachers could do for them.

"Life in our classroom was not necessarily more free or independent than life in the regular classrooms around us. Isolated in desks and controlled by regulations, students are protected from interference by others, from the threatening struggle for social status, from much of the pressure classmates might exert on their behaviour, and from the sustained visibility of individual performance. In our classroom... students worked constantly under the threat of interference; the first problem was to establish friendships, working relationships and status; there was sustained social pressure from classmates, intimidating and supportive; and each student was under constant observation by others, stripped of his usual classroom anonymity and privacy. It also seems evident that the controls of traditional curriculum and instruction do not necessarily deprive the student of independence. Textbooks, lessons and examinations all provide a structure within which the student can focus his individual efforts. In discussions, participation or indifference are both possible. In exercises and assignments he may work to take advantage of the protective minimum effort usually tolerated, or even conspire in the mild resistance of mischief - a convention of formal schooling. But in our class there was comparatively few structures to guide independent effort, and it was quite possible to languish in the limbo of confusion. Indifference was by definition failure. Resistance, awkward since many of the usual justifications of it were removed... Deficiencies usually hidden became glaringly evident to the student and others when he set out to read, compose, plan, discuss, lead and organize in the execution of an activity he chose himself and by that choice said, 'I will do the best I can'.

"During the first week I was surprised to notice that, far from launching into an independent course, students surrounded themselves with a group almost as a prior condition to any activity. These groups, developed during the first few days of the class, established a social structure that remained surprisingly fixed throughout the semester... with few exceptions, and those only for short periods of time, they were all male or all female, the membership was from the same track in the school system, the spread of intelligence scores on the

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Otis verbal test was seldom more than ten points (groups believing this principle tended to break up, and the members to form new groups in conformity with it), and the members of any group seemed to share what might be called the same level of energy in their activities. No enduring group had more than three students, no working group more than four.

"... belonging to a group was a business of the highest priority. Most students were not ready to consider other problems until they established a desirable and guaranteed association. Those who did not work with others or establish friendships did not progress. Those who failed to become partners with others in satisfying work remained stagnant and eventually lost faith in themselves or in the class... But group membership... was not enough. To progress, it seemed necessary for students to go beyond the team project to work on their own... Just as those who failed to establish satisfying group relationships scoured on their work, so members of groups who never completed a rewarding project on their own failed to get beyond the cloying fun stage... As time passed, the defensive bastion became the social oasis. By insuring status, guaranteeing comradeship, reducing the number of threatening features in an unstructured situation and by providing support, groups seemed to make it possible for students to overcome the fear of isolation and anxiety about venturing into unfamiliar individual experience.

"... the important task was to minimize group rigidity and maximize social fluidity. To minimize group dependence and maximize the supportive function... the teacher must listen carefully for signals that an opportunity to break from a group would be welcome... conversely, if the class does not provide suitable associates for some individuals it may be wise to import working partners - the group need is that important.

"While the social forces discussed here tend to be peripheral in a regular class, in a free classroom such as ours they became elemental. While they seem as intangible as air, and often incite... behavior that is difficult for the teacher to tolerate or manage, it seems that students can become free from such forces and learn to act independently within their influence only to the degree they penetrate and control them. Without learning control of the vessel that is themselves they

have no choice but to remain floating among these unpredictable tides," (1)

This discovery - that social forces become elemental in a free classroom - if it is correct, is the most important insight in Gibbons's work. If indeed the withdrawal of the teacher's authority and the conventional structure of curriculum and regulations creates a vacuum which is filled by the authority of peer groups, then the social dynamics of the open classroom, neglected by its theorists, become all-important. Gibbons is suggesting that the failure by open educators to anticipate this problem and to consider it in any systematic way leaves the teacher and students at the mercy of social forces, rather than in a position to use them in the service of their goals.

1) Ibid., p. 209.

IV

THE ROLE OF THE TEACHER IN INNOVATIVE SCHOOLS: WILL IT SURVIVE ?

The new components in the role set of the innovative teacher can be brought together here in a brief summary. What is more significant, however, is to ask whether this new role can survive, spread, and become the predominant role of the teacher in the nation's school system, or whether it is destined to be rejected by the school system at large. First, we shall summarise the innovative teacher's role, and then deal with the question of whether this can become the prevailing model for the teacher's role throughout the nation.

A. THE TEACHER-PUPIL RELATIONSHIP

The formal structure of this relationship is different in traditional and innovative schools. In place of the teacher confronting a narrowly age-graded class of 25-30 pupils whom it instructs as a collectivity, the innovative school groups teachers and pupils in a variety of other ways. Age-grading persists, but the range of ages in the instructional unit is wider, including pupils differing in age by two to three years. At the elementary levels, instruction is done mainly with groups of three to ten and occasionally on a one-to-one basis. Pupils often work as individuals with programmed materials. They also work independently of the teacher in task groups. At the secondary level, large-group lectures are another frequent type of grouping.

Exactly how much dispersion in the pacing of students' work and how wide a range of curriculum choices "individualised instruction" actually means in practice has hardly been empirically examined. There are limits to "individualisation". There must remain a large overlap in the work students are doing. Not only would

total individualisation be very difficult for teachers to handle, it would be incompatible with the need of students to share their work life with their peers.

Carlson found in one empirically studied case of individualisation that the dispersion of pace became so inconvenient for the teachers that they began limiting the output of the fastest students. (1)

The innovative teacher needs more skills of a professional kind than the traditional teacher did. The teacher must know how to diagnose and prescribe for learning problems. Prescribing involves a broad knowledge of available curriculum materials and the ability to create such materials to meet ad hoc needs. Innovative teachers write curriculum constantly.

The innovative teacher must also have new socialisation skills. She should be able to conduct individual interviews of a type similar to the professional interview conducted by a social worker. She should know how to conduct group interviews and how to manage the dynamics of small groups. She also should understand not only "child development" in general but cultural and subcultural differences in socialisation patterns.

Teacher dominance in the innovative classroom is muted. The natural authority which comes with adult competence does not disappear, nor do children cease to rely on it. However, teacher-pupil relationships are warmer and more egalitarian than in the traditional classroom.

Not all pupils are able to function within these premises, however. Some children demand strong external control because their previous socialisation has not prepared them to be self-directive. In such cases, the removal of the teacher's directiveness gives rise to alienation, ranging from the apathy and discontent described by Gibbons, to the hostile and disruptive reactions described by Barth.

Teachers and pupils are both members of an informal social system. How this social system should be dealt with is a question scarcely broached by the philosophers of individualisation and the open classroom. Yet, if Gibbons and Cobb are right, dealing with it is one of the major problems of the innovative teacher.

- 1) Robert O. Carlson, Adoption of Educational Innovations, The Center for the Advanced Study of Educational Administration, Eugene, Oregon, 1965. The importance to students' peer groups of some commonality in their work is probably one of the reasons that the spontaneously-formed groups in Gibbons' and Cobb's English class showed a narrow spread in Otis scores.

B. THE COLLEAGUE RELATIONSHIP

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The teacher's invisibility to her colleagues as she goes about her central tasks is abolished in the innovative school. Inter-age groupings are instructed by team teaching. Several of the most unpleasant aspects of the traditional teacher's role are thus alleviated. No longer is the teacher isolated from adult companionship for most of the working day. Professional exchanges of view and mutual help are more frequent in innovative than traditional schools.

On the other hand, there are new problems. Teachers report that dissensus, combined with equality of formal status lead to strains. There have been proposals that the team be given a formal authority structure. That would not eliminate conflict, but it would ease decision-making.

The mutual visibility of teachers must have many consequences. I know of no empirical study which tries to assess them. While the visibility is significant, it is also structurally limited. A teacher's work is seen most wholly by other members of her team. It is seen in a more limited way by other teachers and supervisors in the school, and not at all by teachers in other schools. Still, the possibility of collegial judgement of professional performance becomes real where there is team-teaching. In fact, such judgements - informally made - are inevitable. They could become the material for formal judgements of competence by the professional colleague group of teachers.

The teacher's autonomy in the self-enclosed classroom depended on her invisibility to superiors and peers. This is reduced in the team situation. It is more than compensated, however, by the autonomy which teachers must have to enable them to treat students as autonomous learners. The greater autonomy and the greater collegiality of innovative teachers make their role more professional than that of the traditional teacher.

C. TEACHER-PARENT AND SCHOOL-COMMUNITY RELATIONSHIPS

In innovative schools, teacher-pupil relationships become more particularistic. Since the teacher becomes more like the parent in her goals, she is better able to get along with her students' parents.

Innovative schools aim to involve the parents heavily in the school, and the community beyond the parents as well. There are

many boundary-spanning roles in innovative schools which facilitate this involvement. One is that of community aide or para-professional, who is often a parent of school-age children. These aides usually come from the neighbourhood. They know the children's culture better than the teacher does. They have prestige in the neighbourhood because of their occupational positions in the school. Thus they represent a link between community and school with loyalties to both and can be very important in preventing misunderstandings. The parent-trustee in the private school is a similar boundary-spanning role. Community people who teach their own occupational skills represent still another. In general, it is the increased number of boundary-spanning roles, rather than the traditional parent-teacher organisations, which bind the school and community more closely together.

D. CAN THE INNOVATIVE TEACHERS' ROLE SURVIVE ?

The common thrust of the innovations described here is toward more particularistic relationships of the teacher with her roles partners, more autonomy for learners, and the elimination of comparative performance-evaluations by the teacher. These changes are radical and they imply radical change in the structure of the school. More than this, innovative schools imply radical change in the structure of the school system and here is where we are faced with the question of whether these innovative schools foreshadow change in the national school system, or whether the system will reject the innovations.

That the school system will reject the innovative thrust is probable. That it will resist it is certain because some key characteristics of innovative schools are incompatible with the school system we now have. While an innovative school may abdicate the selection function by refusing to give students grades, the school system, as now constituted, requires that this function be performed. So long as there is effectively a single national system which is uniform, sequential, and at some level selective (1) it will involve invidious comparison of students on the basis of some

1) For a clear exposition of the fact that the United States has, to all intents and purposes, a single, uniform, and sequential school system which becomes selective at the post-high school level, cf. Thomas Green, unpublished manuscript, Chapter II, "The Educational System", Educational Policy Research Center, Syracuse University, Syracuse, New York.

criterion. If the school which the student is leaving does not grade, the receiving institutions may make the selection. Grades might not be given by teachers, but might depend on external examinations. If students proceed through the system at their own pace, there will be invidious comparisons as to who has mastered how much by what age.

Selection for differently ranked social positions is the central process of social stratification. The selection is not necessarily performed by the school system, but so long as social class position is dependent on occupation, and so long as the schools are heavily involved in training and selecting people for occupational positions, the schools are implicated in the social stratification process.

If this is correct, the elimination of competitive evaluation from the school system is a mirage. As I have suggested, such activities can be moved from one part of the system to another.

Another characteristic of innovative schools, particularism - especially in the teacher-student relationship - is also subject to strain, if one posits it as a characteristic of the national system.

First, particularism is ambiguous. When we tailor schooling to the child's individual needs and personal situation, does this mean that we demand less of those for whom these particularities make high performance difficult, or does it mean that we "compensate" for the particularities in a radical attempt to overcome inequalities of opportunity which stem from the child's social origins?

"Compensatory education" is a national commitment in the United States within stringent limits. There is no thought of making the social expenditure which would be necessary to overcome all environmental handicaps, even if we knew how to do it.

Secondly, particularism conflicts with the universalistic standards which must inform the process of selection at whatever point it occurs. Universalistic selection is part of what we mean by "equality of opportunity".

Finally, the revolt against authority which is implied in the innovative schools represents a deep cleavage in American society. With respect to education, there is evidence that parents are, at present, more committed to retention of the teacher's old authority than are students or teachers or school administrators. (1)

1) See Sam Sieber and David Wilder, "Teaching Styles : Parental Preference and Professional Role Definitions", Sociology of Education, Fall, 1967, Vol. 40, No. 4, pp. 302-315.

What does this add up to? It says that the innovative role for teachers can come about only as an aspect of some radical changes in the national school system. These in turn imply changes in the larger society. We do not know whether these changes are coming. We do not even have the simple descriptive indicators we need in order to know whether the innovations we have described are atypical, or spreading rapidly. They have received a great deal of publicity in those sectors of the communications media which reach the best-educated public. For this public, they clearly have symbolic importance. Whether they have much importance for the greater part of the society, remains to be seen.

II

THE ROLE OF THE TEACHER IN SELECTED INNOVATIVE SCHOOLS **IN FRANCE**

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SUMMARY OF KEY ISSUES

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Educational aims and practice have been thrown into confusion by a whole host of technological, cultural and ideological factors. The teacher's traditional role as a transmitter of knowledge and cultural values is under attack but it is not easy to see what new role he will be called upon to play in a constantly changing community.

The present paper is an attempt to focus on current trends in the teacher's changing role from evidence obtained in eight pilot experiments, all very different in their nature, origin and scope.

Each of these innovations is designed to meet a current need felt either by educational planners or by teachers themselves. But each also offers a clue to future developments in the teacher's role even when this problem is not explicitly raised.

The first of these innovations was planned and developed by the Ministry of Education in the context of its educational reforms. It is therefore official and introduces a new structure and a new type of teaching at national level. Four other experiments are due to the initiative of educational planners or educational bodies at different levels, i.e. in a major educational district (académie) in a sub-district (circonscription), and in an individual school. The sixth is being pursued in the private sector. The last two are schemes initiated by teachers in their own classroom in a particular school.

An analysis of the innovation process in each case reveals a number of specific problems arising from the nature of the changes made and the way they are handled by the administrative authorities and the teachers themselves. But however different these situations may be, a number of underlying problems are common to them all. It may be said that the effect of all innovation is to highlight a classroom situation and disclose a number of latent tendencies with special reference to the teacher's role. These tendencies may be summed up in the following points :

- the amount of freedom a teacher may introduce into his classroom and his efforts to make his pupils more independent depend on the freedom which he himself is afforded or manages to secure in the school at which he teaches ;
- in his classroom the teacher no longer sees himself mainly as a transmitter of knowledge but increasingly as a counselor helping his pupils to express themselves, to make decisions and to organise their personal action ;
- the teacher's role in the educational system is geared to the work of other educators, such as the psychologist, the vocational guidance counsellor, the documentalist, the re-educator ; this entails some limitation on his action although it adds to his information ;
- the educational team, whether institutionalised or spontaneously created, becomes the central factor in practical teaching ;
- the aim in each class/group is to share decision-making through different schemes of co-management, including even collective management ;
- it is felt that there should be a link between teaching and research. The teacher both benefits from and co-operates in research ;
- in the task of rediscovering the teacher's role various models borrowed from other social practices may exert an influence, such as the leader of social and cultural activities, the social psychologist, the therapist, the political militant, etc. ;
- the teacher makes a critical appraisal of his own political role in a social community which he often has no desire to perpetuate.

If all these tendencies are to be given practical effect two conditions must be fulfilled :

- the present rigid institutional structures must be made more flexible in order to encourage pilot experiments ;
- there must be provision for training and further training in communication, leadership and audio-visual techniques.

I

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INTRODUCTION

VARIOUS ASPECTS OF THE TEACHER'S ROLE

What is the teacher's place in a constantly changing educational system? Is he compelled to change his methods, his technical procedures and his own attitude to ensure that his action continues to be effective in a totally changed setting? Or does he find himself being gradually stripped of his traditional function as an initiator and a guide to knowledge and cultural values? In this case, what place is assigned to him? What further tasks are expected of him?

The teacher's role has changed under the converging and sometimes diverging effect of the pressures and projects impinging upon him at different levels, e.g. the extension of the school leaving age, the curriculum reform, the introduction of new syllabuses, such as modern mathematics or technology, the emergence of a new pattern of relationship between adults and children, the growing influence of the mass media, etc. It would require a thorough survey to record and evaluate the institutional, cultural and ideological factors which are transforming educational practice and giving the teacher a new profile. The present brief outline is based on the various educational innovations which have developed in France in the primary and secondary school systems.

The changes which are now occurring affect the teacher's social status, his function in the community and the educational system and his professional practice. Indeed, his very identity is challenged at the present time.

- The teacher's social status has changed as the result of the sudden expansion in the school population. This had led to a considerable increase in the number of teachers recruited and a considerable relaxation in the qualifications required.

This quantitative expansion combined with the spread of urbanisation, the growth of social mobility and the development of mass media has devalued the teacher's status. This is especially true of the primary school teacher who has lost the social prestige he enjoyed for so long. As a result of the social demand for education and the constant increase in educational investment the teaching profession is no longer the preserve of the few. The teacher's role has acquired an added value but in another sense it has been devalued. The fact that a teaching career, though idealised, is often chosen as a last resort when at the same time the proportion of women in the profession is steadily growing, is, in the opinion of many teachers, disquieting evidence of this trend.

- The function of the teacher has been redefined many times in the past twenty years. It has two aspects : the function of the school in industrialised communities and the function of the teacher within the school system.

The transmission of the cultural heritage which has traditionally been the function of the educational system has now been combined with a promotion and selection function which is assuming growing importance in the context of economic and cultural development. Not only are syllabuses being incessantly revised but their actual importance is declining with the advance of methods for organising and retrieving information. The teacher is ceasing to be a repository of knowledge. He is now seen as a guide in a process of learning and creation.

Within the educational system the teacher's role is now geared to other educational roles which were previously more or less merged in his own - e.g. psychologist, vocational guidance counsellor, documentalist or welfare officer. His role is therefore tending to become more specific in a more complex and more diversified system of roles.

Defined in functional terms and based on economic, social and cultural requirements the teacher's role is more effectively integrated with the social life of the community. This offers the stimulation of new horizons but at the same time threatens to subordinate education to the utilitarian exigences of a "system". This explains the teacher's ambivalent attitude towards his own role ; he wants to play his part in the future community but he has to play the part assigned to him.

- The teacher's practice is changing partly because of these new functional prospects (he is not so much required to teach as to supervise learning, and the methods he uses are therefore more active and pupil-centred) because of the introduction of modern technological methods (tape recorders, television, teaching machines, etc.). The operational aspect of his role changes when the teacher uses instruments, procedures and methods other than traditional ones ; his field of action and his procedures are no longer the same. This, too, is an aspect which is conducive to uncertainty and hesitation. He is willing to use technology but is afraid to be supplanted by machines ; he alternately asserts his own personality or abtains from exercising control ; his action is sometimes individualised and sometimes group-centred, etc.).

The teacher is constantly faced with change. He finds it institutionalised in new structures, new regulations, new syllabuses and new methods of evaluation. A change has also occurred in the conduct and attitude of pupils, parents, colleagues and the educational hierarchy. Sometimes the factors which compel a teacher to change may arise from constraints (when he is obliged to conform to a new model), sometimes from their removal (reduction of resistance and obstacles to his creative urge), but in most cases change is due to both sets of factors.

Is the teacher an instrument of changes which have been defined and decided irrespective of his views, or does he himself take the initiative ?

Who is he ? Is he more likely to assert his own identity by agreeing to change or by resisting it ? And what kind of change ?

These questions go beyond the functional and technical aspects of the problem and introduce the problem of the teachers' political role, i.e. the use to which he puts his powers. His task is to transmit ideas, encourage certain types of behaviour, foster certain values and help guide and select individuals ; he cannot be politically neutral. In a word, the teacher finds himself in a dilemma : he must assist young people to adapt to existing socio-economic structures but at the same time he must develop their independence and their ability to challenge these institutions.

The educational experiments to which we refer are now in progress. They are extremely different, not only in their scope and

the length of time they have lasted but in their origin and objectives. They present the widest possible spectrum of the circumstances which foster the emergence and development of innovations.

Our approach to these various experiments has not always been the same. Sometimes we have concentrated our analysis on publications or documents and at other times we have been able to make our investigations in the field and interview teachers and educational planners engaged in an experiment. The information we have gathered is therefore not homogeneous and the analyses do not centre on the same aspects in each case. No comparative study has therefore been possible. A superficial comparison between the experiments merely shows the problems involved and the points at which certain lines converge.

We propose to review each of these experiments and see how and in what respects the teacher's role has been affected by the changes introduced into the educational situation. We shall therefore have to consider :

1. The innovation process : change deliberately induced (the independent variable), subsequent changes (dependent variables) objectives adopted, needs and motivation which prompted the innovation and have to be satisfied.
2. The functional and dynamic characteristics of the teacher's role in each specific situation : the teacher's place in the pattern of functions, operational practices, attitudes, implicit models and reference models.
3. Obstacles and resistances to the development of the innovation and to the change in the teacher's role.

We shall then focus on the points of convergence between the experiments and the problems arising from changes in the teaching function.

ANALYSIS OF DIFFERENT INNOVATIVE EXPERIMENTS

Well before the period 1960-1971, in which the experiments we review were initiated, several educational innovations had been introduced which clashed with traditional practices and offered new prospects of change in the teacher's role.

The two innovations we shall cite here are the Freinet classes and the "new classes", which played a great part in the development of educational innovation in France because of the outlook which prompted them and the results they achieved.

As far back as 1924 the ideas and practice of Célestin Freinet paved the way for a new type of teaching in the primary school system, as a result of which the teacher's task was found to be completely altered. The introduction into the classroom of techniques such as printing, the direct encouragement to pupils to correct their own mistakes, the introduction of a co-operative council in which the pupils take an active part in organising their work have created a situation in which the teacher is a mediator, counsellor or guide. Several experiments in "new education" in private schools have made use of similar models.

With the "new classes" which were set up as an experiment in certain lycées after the Liberation an educational reform movement developed in the secondary system. The teachers who took part were regarded as pioneers. For the first time teams of teachers were formed. Under the responsibility of a "team leader" a joint educational scheme was set up i.e. interdisciplinary activities, classroom councils and meetings with parents. At the same time the new outlook became apparent in the relationship between teachers and pupils (mutual confidence, team-work, out-of-school activities and abolition of rating systems). The idea of a teacher-educator essentially concerned with the needs and interests of the pupils superseded the conception of the specialist teacher responsible for a particular subject.

A. TRANSITION CLASSES

The creation of a new type of teaching as a result of the educational reform of 1959 was combined with a definition of the role of the teacher. This was an innovation at national level introduced by the Ministry of Education but limited to a specific category of pupils.

"Transition classes" were introduced in 1962 for "inadequately taught but gifted pupils", "late developers" who "are not eligible for the observation cycle" but are now required to remain at school until the age of 16.

The Ministry circulars in connection with these classes emphasized the following points :

- there is no fixed curriculum ;
- there is no fixed timetable ;
- the number of pupils is limited to 25 ;
- the classes are run by one teacher selected from those who have had experience with active methods ;
- a new type of teaching is recommended involving :
 - individualised teaching methods to "remedy the individual inadequacies of each pupil" ;
 - or if these fail, the establishment of working groups "allowing for differences in the level and ability of the pupils" ;
- a "new climate" has been fostered in which the children are able to regain confidence in themselves and lose any guilt feeling prompted by their poor school performance ;
- practical training courses are organised for teachers in transition classes.

The above schemes have thus provided an official framework and a set of educational principles which are sufficiently flexible to afford teachers a wide measure of freedom in pursuing the objectives assigned to these transition classes, namely to give children a fresh initiation into the rudiments and re-awaken an interest in their school work. The teachers in charge of the transition classes have lost no time in combining the basic educational requirements with a more long-term objective which they feel is particularly necessary for comparatively deprived children i.e. a training in self-reliance, responsibility and judgement. The class co-operative with its meetings at which the pupils are required to take decisions as a body is the principal means used for this type of

training. "It is the corner-stone of the new edifice", as one of the teachers expressed it.

The teacher in charge of the transition class is in an equivocal position: he is expected to be an innovator and to have special teaching ability for which he draws a special increment but he is generally condemned to isolation in the school where he teaches this class which is made up of children who are considered incapable of pursuing a normal school career. He is not sufficiently integrated into the Collège d'Enseignement Secondaire, and is sometimes even pushed into a siding. Furthermore, there is considerable controversy about the actual function of transition classes. The official attitude is that transition classes afford certain children an unprecedented opportunity of readapting and catching up with the others but the classes are greatly criticised as a selective measure dictated by economic exigencies (they are expected to cater for 25 per cent of the children in their age group, which is exactly the percentage of workers who do not require a vocational qualification). Consequently the teacher who runs a transition class finds himself involved in a number of teaching problems which obviously have psychological, socio-economic and political implications.

Official instructions define the role of the transition class teacher in great detail. They do not allot him a specific role but rather re-define the functions of the primary school teacher which have been found inadequate for certain pupils and must therefore be remodelled. The procedure is largely to apply active methods more or less prompted by Freinet's ideas. The teacher is required to concentrate not on the syllabuses but on the pupil, evaluating his potentialities and deficiencies and analysing the causes of his failures. On this basis he is asked to organise class activities and act as a group leader who, with "quiet authority" will give the class a "renewed zest for work and a desire to do better and make progress". He can provide "useful but unobtrusive advice" but "the pupils are still free to make their own decisions". His task is to "guide each pupil unobtrusively", "moderate his impulses" or "spur him on" and lend him sufficient support to "buoy him up but not to stifle his initiative". He must not only be a good teacher but also a man of tact and character with "an understanding of his pupils, great self-control, a willing ear at all times and generosity without weakness".

Teachers in charge of transition classes hardly consider that they are working to enable their pupils to catch up with the others.

They feel it is a mistake to believe or let others believe that their pupils will, with few exceptions, be able to qualify for traditional schooling. They therefore see their role as basically different from the teacher's traditional role. Their new function, into which they often throw themselves wholeheartedly although with some anxiety because they feel they are inadequately trained for it, is essentially, in their view, one of emotional and moral support.

It consists of :

- restoring each pupil's confidence in his own potentialities by encouraging self-expression and acting as a discussion leader but refraining from any judgement. The teacher acts both as an umpire and as a group leader.
- being present as an adult, that is to say, providing a model (embodying respect for one's neighbour and a co-operative attitude) and a reassuring reference factor.
- counselling pupils on the decisions they have to take, e.g. the choice of a subject for study, a working procedure, and in particular aiding them to plan their future as workers and members of the community.

This conception of the teacher's role is clearly influenced not only by certain teaching procedures which have permeated the educational system and are particularly used in schools for mal-adjusted children (active methods, Freinet's techniques, Decroly's method based on centres of interest, etc.) but also by procedures adopted outside the teaching profession, for example by re-educators, psychologists who deal with individual cases, social workers who prospect the environment and try to discover conditions likely to promote a more effective integration and socio-cultural organisers whose task is to stimulate the members of their groups and co-ordinate their individual contributions.

As he no longer has to work to a syllabus, the teacher in charge of a transition class is free not only to apply the active methods recommended to him but also to make innovations according to his own temperament and personal choice. Nevertheless, owing to the institutional ambiguities to which we have already referred and the inadequacy of the training given to teachers, these facilities are not always turned to account. Instead of being used for bringing the children up to scratch, the transition classes are often turned into a dumping ground for misfits and finally become a dead end. The teacher in charge then feels that he is cut

off from his colleagues in other sections of the CES and that his function is purely marginal. Nobody knows exactly how far the transition cycle succeeds in rectifying socio-cultural inequalities or how far it helps to perpetuate them.

D. THE ORGANISED DAY IN THE ACADEMIE DE TOURS

The organised teaching day is the result of the re-organisation of the timetable and syllabuses affecting three sets of factors : the basic disciplines, physical activities and other activities designed to stimulate the practical, intellectual and aesthetic functions. This system was defined in the 1969 legislation which envisages its general adoption throughout the primary school. Out of a working week of 27 hours, 10 are devoted to French, 5 to mathematics, 6 to physical education and open-air activities, and 6 to stimulation. The organised day has met with varying success in individual schools for it has to contend with professional inertia, the shortage of equipment and, above all, the fact that teachers have not been adequately trained.

Since the autumn of 1969 a particular effort has been made in the department of Indre-et-Loire under the stimulus of Gérard Delaisement, the District Inspector, to ensure that there is an organised day not only in primary schools but in Collèges d'enseignement secondaire and Collèges d'enseignement général. The introduction of the organised day is an attempt to reform the whole educational system. The aim is to discover a new teaching method and, in the words of the Inspector, to stimulate "a new outlook and fresh enthusiasm". The following steps have been taken :

- the establishment of teams of teachers specially trained in two pilot schools, an urban CES and a rural CEO ;
- the development of teaching by pictures following the distribution of audio-visual media, tape recorders, photographic equipment, etc., to all schools. A group of about 40 teachers is engaged in revising syllabuses and procedures for the use of this equipment ;
- co-operation between schools and various cultural bodies, for example the Tours Municipal Library which helps to keep the clubs going, the Tours theatre which gives pupils an opportunity of seeing how plays are staged and rehearsed, the local museums and picture galleries, etc. ;

- the development of physical training and sports ;
 - by providing instructors for the children ;
 - by giving teachers ample opportunities for training and taking part in matches at departmental level ;
- the establishment of an Educational Retraining Centre which provides practical training courses for teachers in which they are initiated into audio-visual techniques and hold discussions on all aspects of educational activity "with a view to facilitating innovation" ;
- experiments in making educational structures more flexible and less compartmentalised and giving teachers an opportunity to follow the progress of their pupils from one cycle to another so that a woman teacher in an infants' department can teach in the first year of primary education ; a teacher in the last year of primary education is able to teach French in the first year of secondary education, while teachers are allowed to take part in both cycles of secondary schools, and interdisciplinary activities are organised around common themes.

In the field of action thus provided the educational teams have made varying progress with their schemes. The pattern of time and space has been altered to a varying degree and the scale on which clubs and workshops pursue their activity and teachers co-operate varies from one school to another. In extreme cases timetables and class divisions have been discarded. Pupils are grouped by workshops where they carry out the weekly or fortnightly contracts they have undertaken. The teachers intervene only where they are concerned and at the request of the pupils.

The teachers are strongly urged by the Inspector to change their outlook and renew their conception of their role :

"Break out of the aggressive world of circulars, syllabuses and exams".

"Encourage your pupils to think for themselves and to see their work as a game ; adopt an attitude of consent and participation as a check to your own tendencies".

"Discard your own image and the stereotype you have of your own tradition-bound teachers".

"As a teacher be generous and as a man never lose contact with life, every sort of life (sport, art, social life, family life) ; be a model of happy relaxation in all your activities ; try not to present the image of a dispenser of cold, indigestible

knowledge or an uncompromising judge dealing out retribution. Be forthcoming with your pupils and win their confidence, do not seek to impose standards or encourage rivalry : what is wrong with playing truant now and again ? The point is to help your pupils to create from what is within them and not from what you thrust upon them from outside."

It can be seen that the model advocated by the Inspector is a dynamic, athletic one in which character plays an essential part, it embodies a warm, outgoing, generous and progressive approach. It is a model designed to make converts and stimulate the creative powers of the school community by the impact of innovation and by example.

The teacher's role is changing in several directions :

- Specialisation : certain teachers perform the function of co-ordinators in the educational team, others are workshop instructors, others become individual technicians.
- Co-operation not only with colleagues in other disciplines but with different types of specialists (documentalists, librarians, actors, etc.) who have a contribution to make to the teaching syllabus ; co-operation with parents who are invited to participate in educational activities ; above all co-operation with the pupils, who now take part in organizing the syllabus and taking other decisions.
- Greater involvement, for teaching is becoming a full-time occupation in which the actual time spent in the classroom is supplemented by other duties, such as organisation, informal contacts with pupils and the preparation of documentation.
- Greater scope for his creative powers, fostered by more flexible educational structures, access to additional working facilities and the encouragement of the authorities.

The education system in a whole region cannot be reformed overnight. The Inspector does not feel that the material and administrative problems involved are insoluble, but he admits that he is having to contend with inertia and resistance to change on the part of a number of teachers and inspectors.

C. EXPERIMENT IN THE 20TH ARRONDISSEMENT OF PARIS

The educational experiment which has been in progress since 1962 in the 20th arrondissement of Paris was initiated by M. Glotton, an Inspector of Primary Schools, who issued an appeal to all teachers in his district to join in an "overall, scientific" effort at educational reform.

The basis of M. Robert Glotton's action is the realisation that primary school education in its traditional form is a failure. It is not only unsuited to children but also to the requirements of the modern world and to scientific progress. The energy it squanders is enormous, the results obtained being disproportionate to the efforts of teachers and pupils. Instead of correcting socio-cultural disparities it merely reinforces them. Hence the idea of an "overall, scientific" reform designed to restore efficiency.

The scheme is not intended to impose new teaching procedures but to create conditions enabling teachers to innovate and experiment as they think fit. It consists in :

- the introduction of a weekly meeting of teachers as part of their working timetable ;
- the introduction of experimental classes and schools with the help of teachers who volunteer to co-operate with the researchers at the Institut pédagogique national ;
- the reorganisation of control from above through the adoption of a "collective school inspection" as from 1968, under which each class receives the visit of an inspector and each teacher presents an exercise of his own choice after which a consolidation meeting is held between the inspector, the headmaster and the teachers.

As their projects and thinking progress the teaching teams have occasion to change their methods, introduce new techniques, revise methods of evaluation and set up new institutions, for example, class co-operatives, school councils, clubs, projects for senior children to act as elder brothers to the juniors, the "classe de quinzaine" and to try out self-directing teaching methods, etc.

Teachers are also engaged on a scheme of reform which has three aspects : adaptation to the children's requirements, adaptation to trends in the modern world and democratisation. The experiment which is developing in co-operation with the work of the

"Groupe français d'éducation nouvelle" is prompted by the tenets of militant rationalism in which socio-political objectives are combined with an attempt to place teaching practice on a scientific foundation.

The teacher is assisted in changing his teaching methods and general image in the school ; his role is becoming wider and more diversified.

1. He plays a part in a number of out-of-school activities, namely the clubs, the school council and the co-operative class, where he is sometimes the group leader and sometimes a participating member. As a leader he guides the children in the exchange of ideas and helps them to organise meetings and take decisions. As a participant he has his say in the discussions, and votes with the children, in both cases he pursues his role as an educator. He avoids influencing the children in their decision-making but provides them with the information they need ; he draws their attention to difficulties and reminds them of any undertakings they have assumed. In submitting to democratic discipline he is the group's moral guarantor ensuring that the rules established for the group are adhered to.

2. An important factor is his indirect relations with the pupils :

- he is a member of a school teaching team ;
- he is a member of an educational team which includes the teachers, the headmaster, the inspector, the welfare officer, the re-educator, the school psychologist and the school medical officer.

So, he is engaged in a process of self-training, and mutual training and research, both individual and collective.

3. In the classroom his role seems to be a complex one :

- he is "a technician capable of finding the right response to the needs of his class" placing his abilities and experience at the service of his pupils ;
- he is a source of information either by direct transmission or by facilitating access to information. This point is strongly emphasized : the teacher is "an irreplaceable medium for the transmission of the national heritage" ;
- he is an organiser and leader. These two terms, frequently used to describe the new aspects of his role, arise

from the need to tackle situations rather than influence children. What is required is to "create a new situation in the classroom making the task in hand the direct concern of the children", namely by organising the task or more precisely organising "the physical and mental approach to the task". This fosters a gradual change in the children's motivation. "As the situation unfolds the child's mind unfolds with it until he reaches a further stage of development".

Sometimes the teacher proposes a specific type of organisation, sometimes he aids his pupils to arrive at a solution by helping them to exchange ideas ; sometimes he acts more indirectly still by confining himself to explanation i.e. "he draws the pupils' attention to their difficulty in listening to one another and organising" :

- he acts as a support to the children, although this aspect of his role has been disputed. Teachers have quoted examples of failures which they attribute to the fact that the children were not given adequate aid. Other teachers, on the contrary, are afraid to adopt a paternalist attitude.

On this latter point, as on the others, it will be noted that the experiment now in progress in the 20th Arrondissement offers an opportunity for a variety of choices and trends. No pressure is exercised to standardize procedure ; indeed, the contrary is true. Those taking part are glad to note that "the progress achieved in educational reform" has varied with the schools and the teachers concerned. The question which is often asked, "what should the teacher's new role be ?" still remains unanswered. No model is proposed.

Indeed, the influence of several models may be discerned in the teaching practice adopted and the views expressed :

- the teacher-technician, on Freinet lines, who is able to renovate teaching by using modern techniques and introducing a new teacher-pupil relationship ;
- the teacher-psychologist trying to base his work on an objective understanding of the needs of the child, his development and the psychological mechanism of the learning process ;

- the teacher-group-leader-social psychologist, who can conduct a discussion, ensure the participation of all the children and analyse the learning processes in a group situation.

The models have varied in their relative significance at different times in the course of the experiment.

The general process falls into two periods. In the early years of the experiment the 20th Arrondissement team concentrated strongly on research and the mastery of more effective and more functional teaching techniques. In the second period, when the technical problems had been mastered, several teachers came to the conclusion that continued work along the same lines would endanger the experiment, and be a kind of excuse for their failure to throw out a more radical challenge to actual teaching practice. Efforts were then concentrated on two objectives :

- building up a teaching team to rethink the teacher's role in the classroom and promote a change in personal attitudes. With this object in view, two teachers decided to take part in an experiment in pupil-centred teaching. "We have always considered our role at two levels" they said, "that is, as group leaders and as organisers. And yet we regarded ourselves as competent and experienced adults who knew what children required". Henceforward they intended to adopt another sort of relationship : "respond to the requirements of the class", "be at the disposal of the group" with a receptive attitude. "Why should not the teacher too try to find his level in the group, like the others ?" ;
- training themselves in the analysis of the group phenomena which arise in the class and thus endeavouring to acquire a training in social psychology.

The obstacles to a change in the teacher's role which have been encountered in the course of the experiment in the 20th Arrondissement are of two types, institutional and psychological.

1. The educational innovators in the 20th Arrondissement feel that it is a forlorn hope to take over responsibility for the traditional educational objectives where failures (repeaters, failures at the lycée entrance examination) are rife and at the same time to envisage a radical transformation in their school. The need to satisfy the exigencies of the examination system is particularly irksome.

From the administrative viewpoint the rigid regulations for the appointment of teachers make it hard to build up training teams despite the fact that the regulations have been relaxed to promote the experiment. Co-optation is considered necessary.

It is felt that the only way in which such schools might have the necessary flexibility to carry through a global experiment of this type is by acquiring the status of experimental schools. This would make them safe from interference by officialdom and would foster the emergence of an "educational community" run by those concerned namely the headmaster, the teachers and the parents.

Other administrative and material obstacles have been reported: the administrative workload which makes inspectors and headmasters less available as educational counsellors, unsuitable school buildings, lack of premises, playing grounds and work rooms for the "organised day" and the general inadequacy of material facilities. The salient impression is that although this experiment has the moral approval of the public authorities it does not receive effective assistance.

2. There is tension between parents and the school when important innovations upset established habits and are felt by parents to be a risk to their children's future schooling and vocational training. This tension undoubtedly unsettles the children. Many parents, particularly in backward socio-cultural environments, expect schools to remedy the educational deficiencies of their children by firm if not repressive procedures.

It is clearly difficult for the teachers to eliminate the traditional image, for it provides a standard from which it is not possible to deviate without danger. They often blame the inadequacy of their initial training and refer to the impossibility of acquiring additional training, particularly in social psychology, which has proved to be indispensable.

The effect of all these difficulties is to demand a greater output of energy from teachers and a considerable personal involvement, neither of which can be sustained for a long period. Hence the lassitude and inflexibility of certain teachers who take refuge in the purely technical aspects of teaching.

D. "THE CENTRE EDUCATIF ET CULTUREL" AT YERNES

The educational and cultural centre at Yernes consists of a number of establishments housed in a single building. A number of other centres have been added to a Collège d'enseignement secondaire built in 1967 : a social centre, a sports centre, a "Maison pour tous", mainly consisting of workshops for art and handicrafts, and a library. An adult up-grading schemes centre is under consideration.

The fact that these activities are integrated for a wide range of educational and cultural purposes is a guarantee that the premises and equipment will be utilised to the full. However, the advantages of integration are educational as well as economic. The school is no longer isolated from the focal points of social and cultural life : it takes its place in a system of permanent education. An individual's schooling period thus becomes one stage in a process of continued training which spans the whole of his existence.

Jean Estève, who organises the Centre, feels that educational practice is bound to be transformed by the very fact that the school itself carries on all kinds of exchanges with the other branches of the Centre.

1. The teachers at the CES can serve part of their time as group leaders in the Centre's various workshops. There they work with groups of young people and adults among whom they often find their own pupils in a situation totally different from the school environment.
2. Teachers find it possible to introduce these workshop activities into the substance of their own teaching practice because of the equipment available at the centre, such as stage properties, drawing and photographic displays, etc.
3. All types of creative workers, poets, actors, etc., are invited to visit the school.
4. Teachers are encouraged to introduce innovations. Certain of them have spontaneously formed a teaching team to develop inter-disciplinary activities and try to establish new relationships with their pupils. In this way the "collectif sixième" (1) was set up after a meeting between teachers, pupils, parents and a number of outside guests although its composition and methods of procedure are not approved by the authorities of the CES.

1) A community group made up of teachers and parents of pupils in the sixth grade (first year of secondary education).

The educationists who planned the Yerres Centre had the following objectives :

- from a short-term standpoint they wished to set up a new educational complex in an urban area as a stimulus to the life of the community. The particular character of this institution is due to the participation and support of the local organisers ;
- they also wished to provide educational facilities in line with the requirements of a constantly changing community. The conception of permanent education as a continuous process of training is given form and substance in a Centre where there are facilities for a wide range of exchanges between school life and that outside. From a long-term standpoint it is anticipated that the effect of this osmosis will be to transform school syllabuses, methods and images.

The teacher performs two functions : as a teacher and as a sports and socio-cultural leader. But this is not obligatory and the number of teachers at present participating in the activities of the Centre is limited. Teachers experimenting with new types of relationships with their pupils in out-of-school activities tend to change their actual classroom practice and new attitudes and new procedures emerge. The teachers who are experimenting with the "collectif sixième", tend to challenge the institutional standards of education. They propose to act as "educational propagandists" with a view to gaining influence in the school and setting off a process of concerted contestation to secure additional rights for their pupils and their parents. For this purpose the teachers concentrate on the group. "The role of a group", said one of them, "is not to teach but to discover, to focus on the emerging and evolving inter-relationships and because of its permissive nature and the moral support it offers, promote exchanges, understanding and spontaneous adjustment among the partners". Knowledge is transmitted by audio-visual methods and other media, and the task of the teachers is to help the pupils to receive and assimilate the messages.

Although the organisation and equipment of the CEC at Yerres enables teachers to transform their practical procedure it must be admitted that the available facilities are far from being fully utilised. The head of the CEC hopes that in time the outlook of teachers, pupils, parents and other users of the Centre will change

as artificial barriers are removed. The resistances to change which the head is trying to overcome with the help of those in favour of his project are due to several reasons, such as the inertia of habit and the lack of assertiveness which make the teacher a prisoner of his conventional image. One other reason, however, is that the project is not a joint one. The teachers more or less explicitly refuse to be used as tools for a demonstration. Those who set up the "collectif sixième" have introduced their own project which deviates from the aims of the institution and is regarded as dangerous by the authorities, the parents and other teachers. There would seem to have been no success in evolving a joint definition of the new role of the teacher in a new educational context. This has not even been achieved among the teachers who came to Yerres in order to break away from the old routine and embark on a process of change.

E. THE "COLLEGE D'ENSEIGNEMENT SECONDAIRE EXPERIMENTAL" AT MARLY-LE-ROI

The CES at Marly-le-Roi was designed entirely as an experimental school. Its architecture, equipment, organisation and its staff were logically chosen in view of the objectives and assumptions laid down officially by the Institut pédagogique national (IPN). The school has been operating since 1966.

The aim of the promoters was to review teaching procedure and introduce three innovations :

- the methodical use of audio-visual media, mainly closed-circuit television, which was regarded as "a reform-compelling" factor likely to rule out the possibility of any relapse into previous practices ;
- the pupils do all their work in the school with the assistance of the teachers and a self-documentation centre ;
- the reorganisation of the timetable into four successive phases of 20 minutes :
 - the diffusion of information at each particular level ;
 - its processing by the class under the direction of the teacher ;
 - its assimilation by the pupils working individually or in small groups ;
 - verification that the message has been correctly received.

Initially, the scheme was fairly rigid, the intention being to oblige teachers and pupils to adopt the new methods, but it has had to be relaxed in the course of its application. Nevertheless, it has been carried out in its main lines, such as :

- the introduction of a classroom layout suitable for audio-visual media ; the unit is the trefoil with six lozenge-shaped classrooms each dividable into two triangles by a temporary partition making it possible to work with half-groups of 12 to 18 pupils ;
- technical equipment : a recording studio, language laboratories, special rooms for handicrafts and art work ;
- preparation and utilisation of broadcasts by the teachers working as a team.

The existing educational organisation was thus completely transformed at the outset. The experiment is kept under review by the Bureau d'applications pédagogiques which planned it ; researchers visit the school and take part in all the teachers' meetings. Although the experiment at Marly-le-Roi centres around audio-visual techniques and the necessary reorganisation of teaching procedure entailed by their use, it is also designed, in the mind of the planners, to meet the demands of modern civilisation (mobility, the flood of new knowledge, the intrusion of the outside world into school life) and to cope with the growth in the school population which involves a "political" problem in the wider sense, namely the democratisation of education and the use of television to reduce "socio-cultural inequalities".

The teachers in the CES at Marly are volunteers who are recruited on the basis of their teaching records. A knowledge of audio-visual techniques and an interest in teaching research are required. Their timetable is replanned in accordance with the requirements of the experiment. Their new duties are, however, offset by a reduction in their teaching hours.

All teachers who participate in the experiment have their teaching timetable reduced by 1/9, i.e. 2 hours for certificated teachers and 2½ hours for CEG staff. In return they are expected to conform to a collective system which entails :

- receiving and utilising the broadcasts which have been decided by the subject team ;
- working at the rate laid down by the seminars of the Institut pédagogique national ;

- adopting a homogeneous system of checking and marking ;
- "refraining from attempting individually to reintroduce traditional teaching practices likely to distort the interpretation of the results, under the pretext of rectifying or making good certain deficiencies in the experiment".

They are required to participate in research by admitting observers to their classrooms, co-operating in the work of the Bureau d'applications pédagogiques and compiling reports on the progress of the experiments. At the request of the team leader they are expected to take part in producing broadcasts or finalising documents for use in teaching. They must "undertake to acquire an audio-visual approach".

Teachers also have an hour off to take part in a weekly meeting to organise the work of their team. This meeting, which actually lasts two or three hours, is designed to enable each teacher to reduce his own preparatory work.

Co-ordinating teachers take responsibility in their particular subjects for implementing the experimental plans worked out by the IPN seminars in which they participate. They organise weekly meetings of the teaching teams, distribute and supervise duties, ensure that work proceeds at the appropriate rate and the audio-visual timetable is adhered to and they send in a monthly report. These activities may take up one, two or three hours a week according to the subject concerned and the time spent is also subtracted from teaching hours. Furthermore, teachers occupied by audio-visual research and the production of original material may be paid for a limited number of hours of overtime.

The use of closed-circuit television and the reorganisation we have just described channel a teacher's action willy nilly in a direction from which he can no longer revert to conventional models.

The teacher is divested of the discretionary powers he normally exercises in his classroom. Decisions as to syllabuses, rates of progress, objectives and tests are taken by the team. Teamwork in this context is not, as in other experiments, a procedure considered more efficient or more satisfactory by teachers who feel that otherwise they are isolated and their efforts are unco-ordinated. Here, it is an obligation which nobody can avoid. The production of audio-visual messages and their utilisation cannot but be collective acts. In the production team there is co-operation with the technician and documentalist. In the teams of users whose

responsibility is to work out ways and means of utilising the messages and checking the progress made, all teachers have a voice in their particular subject but the task is sufficiently complex to require a diversification of functions based either on the different stages in the overall educational strategy.

In view of this new organisation and practice the teacher's role must be considered from two points of view :

- a) The functional aspect. In his classroom the teacher no longer occupies his former dominant position ; he is no longer the repository of knowledge and the transmitter of information. Even if he has helped to produce this information, i.e. as a co-producer of the broadcast (which is not always the case) he receives it just like his pupils and side by side with them. At the stage when the message has to be utilised he becomes a group leader. His task is not to provide additional information but simply to answer the pupils' questions, give any explanation needed and help the pupils to communicate their views and criticisms to one another. In the triangular or bi-triangular classroom layout where all eyes converge on the television receiver his physical place is neither central nor fixed.

But an important part of his activity takes place outside the classroom. Decisions concerning syllabuses, the composition of broadcasts, their programming and their re-use are made by the production and utilisation teams and the IPN seminars. The very conception of production and "utilisation" is a reference to the association between teachers and directors, technicians, documentalists and other teachers in manufacturing the material. The teacher must know where to take over effectively in a system where the constraints and potentialities are to some extent beyond his control. He has to learn to use audio-visual language which is practically always new to him.

It should be added that the research activity in which he co-operates is also a factor which affords the teacher a more effective perspective from which to observe and rectify his classroom procedure.

The teacher is thereby induced to concentrate on analysing his own approach, by defining his objectives, by his choice of strategies and methods of transmission and introduction of feedback.

b) The socio-emotional aspect. The teacher's solitary relationship with his class is disrupted. He has less opportunity of obtaining narcissistic pleasure from the prestige of personifying knowledge and wielding absolute power over his pupils with no fear of competition. Not only is some of the knowledge now transmitted in a way which by-passes him but it is perfectly clear to everybody that his proposals and his decisions are the proposals and decisions of the team he belongs to.

In these circumstances the teacher's personal input tends to shift from the classroom to the part he plays in the educational team. Here he is with other adults and has to meet the alternating challenge of solidarity and competition as in any other working group. It is clear that the teachers at Marly feel that the most rewarding part of their new role is the fact that they have come in from the cold of their isolation to the warmth of a joint effort in a team where no importance is attached to qualifications and categories. This does not of course prevent the formation of other hierarchies depending on the importance of the part played by individual teachers in the planning or preparation of broadcasts or the development of research.

The CES at Marly-le-Roi has been afforded exceptional facilities to pursue a series of experiments covering all aspects of teaching practice. The teachers have been deliberately placed in a situation where their role is to re-invent in a context of innovation and research. This is a situation which is sometimes exhilarating and sometimes disquieting but in any case always very exacting. Several kinds of difficulties have to be faced :

- there are no rules and regulations in France for experimental schools which would make it possible to reorganise the teachers' timetable to suit the needs of the experiment, as for example by introducing a daily timetable which allows for the teachers' various tasks such as : teaching, meetings, preparation of documents, etc. The fact that the teacher is supervised and remunerated on the basis of his teaching hours makes it necessary to resort to compromises and expedients which are always questionable in view of the fact that his new activities are becoming increasingly important ;
- the "change-compelling factor" which has been systematically introduced into the CES at Marly cannot but be effective in the sense that the teachers are no longer free to choose their

own methods and organise their own teaching and are therefore unable to refer to traditional models and fall back into the old groove. But despite the fact that they initially volunteered for the experiment, their fidelity to the joint undertaking often entails problems, especially as :

- the relations between the teachers and the promoters of the experiment sometimes place the teachers in a position of subordination and dependence. Are the teachers mere subordinates responsible for implementing what has been decided for them by people who are not concerned in the daily life of the school ? Are they working for the benefit of the personnel of the IPN and the researchers ? On what lines could co-operation be organised to make the teachers also feel this was really their experiment ?
- reference is often made to the lack of appropriate training for the new role the teacher is called upon to play. Group dynamics, a training in communication and institutional analysis are considered to be as necessary as an education in audio-visual techniques.

F. A NEW SCHOOL : "LA SOURCE"

La Source is a "new school" which was established in 1946 by Chatelain and Cousinet at Meudon-Bellevue in the Paris suburbs. Initially a primary school, it was gradually extended to cover the pre-school, elementary and secondary cycles.

The founders of La Source created a new type of institution which has completely broken with traditional educational standards. It is not designed as a school where teachers train pupils but "a home for children, parents and teachers", i.e. primarily a place where adults are able to live with children.

This project could be carried out only in the private sector, away from administrative constraints and control.

To begin with, the situation is that :

- the setting is totally unlike the precincts of a school : La Source is a house standing in a garden ;
- the timetable is planned to ensure continuity and flexibility : there are no set times for lessons ;
- the schoolwork is not divided into "subjects" ;

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- the children work at their own rate, which means that work is individualised and the children can choose their own activities ;
- the teachers who use these methods are not selected for their university attainments but for their personality (interest in children, approachability, well-balanced personality) ;
- there are frequent meetings of various kinds to help teachers to adjust themselves to their tasks and ensure co-ordination. There are meetings of the teaching team, meetings between teachers and researchers (for example for the introduction of modern mathematics or linguistics), and parent-teacher working groups ;
- the school is permanently open to visitors and parents. Every year there is an "open week" enabling parents, educators and teachers interested in the school not only to see classes at work but to talk to teachers and pupils. In this way the teaching methods are constantly re-adjusted. Every teacher is entirely free to conduct his class as he thinks fit provided that he ensures continuity with the work of the previous class.

This year the school was enlarged and the primary classes re-organised, and groups were set up for mathematics at various levels. Although they continue to belong to "groupes de vie" for other activities, children in the 9th and 10th and in the 8th and 7th classes, are assigned to one of three groups according to their abilities and achievements but if they make progress or, conversely, if they are unable to cope with the work they are doing, they are allowed to change groups. Classes no longer exist as teaching units. This reform was planned and developed by the team of teachers in the primary cycle and it was on their initiative that the parents were associated with the reform.

The basic objective is to centre teaching on the child. The aim is to cater for his needs and this means essentially that the child's environment (the classroom, the school) must allow him to express his own needs, desires and will. In this environment the teacher does not exercise direct action but ensures that the child is able to satisfy his own requirements (and particularly his need to learn). The child analyses his requirements, evaluates them and matches the task assigned to him with the resources available. The teachers whose function is to foster this environment do not live outside it but belong to it themselves. Their responsibility

is to form an active, relaxed and creative team in which all relations are free and unconstrained.

The teacher at La Source is not an "instructor". His activity inside and outside the classroom is based not on the transmission of knowledge but the development of the child.

The teacher's place is not in the centre of his classroom. He spends varying periods working with individual pupils or groups or with the whole class. He watches the behaviour of the children carefully and notes how they tackle their work, either individually or in groups. When he intervenes it is either to give information, answer a question or "help out" a particular pupil. From the standpoint of method it may be said that his role has three aspects:

- Observing the pupils : here his aim is not only to get to know each pupil, understand his difficulties and measure his progress but also to shift the emphasis away from himself. His knowledge of the pupils and his teaching approach, which is based on the behaviour and procedure of each pupil, are strengthened and enriched by the exchanges he has outside his classroom, such as meetings of the teacher team, contacts with parents collectively or individually and correspondence with them via the pupil's report book.
- Teaching activity : here teaching is envisaged as a stimulus to the activity of the pupils. The teacher intervenes in a variety of ways. He sets the pupils a programmed task, provides material (particularly the methods which induce pupils to condense what they learn), gives explanations and sees that information circulates between the various groups. The teacher carefully watches his pupils grope towards the solution of their problems and helps them make their discoveries and, when the time comes, consolidates their acquisitions. Prompting by the teacher is not ruled out but is admitted only when justified as an aid to the pupil's own efforts.
- Discussion-leading : the fact that the teacher is not a judge does not prevent him from exercising a certain measure of control. He has to enable the pupils to get their bearings. He ensures order by seeing that each pupil or each group or the class as a whole knows what is going on. For example, no project or change suggested by the pupils is ever rejected : the teacher gets them to explain their intentions in detail and discuss them among themselves.

The operational aspects reflect a conception of the teacher's role which, particularly in primary school classes, lays emphasis

on the presence of an adult who is open-minded, attentive and benevolent and not an exemplary image of knowledge or efficiency. The teacher does not personify social, moral and cultural standards. He helps the group discover these standards through the incidents in their collective activity. The model of the educator or the holiday camp group-leader which has prevailed since the foundation of the school has gradually been combined with that of the class organiser whose task is to facilitate communication.

In a word, the teacher is an innovator. The confidence he enjoys at his school and the part he plays at educational meetings and symposiums enable him to analyse his own situation and review his own practice and attitudes every so often.

The portrait of the teacher we have just drawn is the ideal envisaged by the educators at La Source. Although this ideal has been attained by certain teachers or at certain times, achievement sometimes falls short of reality. This is due to certain obstacles. Some are institutional :

- the requirements of public examinations (lycée entrance examination, BEPC, Baccalauréat) are not entirely consistent with the ideal of personal development pursued at La Source. A certain anxiety is felt in this connection by the parents and even the pupils.

A number of concessions to traditional teaching have had to be made in the secondary department.

- a private school recruits its pupils from a privileged environment. Certain teachers consequently feel some dissatisfaction not only for ideological reasons but also because the children they are dealing with already reflect the habits and modes of expression of a relatively homogeneous background ;
- the inevitable problems of hierarchy between the authorities and the teachers is intensified by the fact that the headmistress has held her post since the school was founded and therefore tends to be identified with the institution. The educational projects of the teachers and the headmistress's plans do not always coincide and adjustments are necessary. Other obstacles are due to the inadequate training of the teachers :
- most teachers have not been systematically trained in group work.
- finally, there are difficulties of communication. For example, certain teachers are still reluctant to allow colleagues to sit in on their lessons.

The training problem has been found so vital that La Source took the step in 1969/70 of setting up a training centre for teachers in the primary and secondary cycles of pilot schools. This centre has operated for a year on an experimental basis but has not yet obtained the necessary subsidies to continue its activities.

G. AN EXPERIMENT WITH AN EDUCATIONAL TEAM IN A LYCEE IN THE PARIS AREA

As a result of the great challenge of 1968 many teachers felt the need to break with the usual teacher/pupil relations and find another role for themselves.

Three teachers at the Lycée Marie Curie, Versailles, acted on their own initiative and set up an educational team consisting of colleagues from different disciplines and a number of psychologists. No specific system of teaching was advocated at the outset. The team was designed as a setting for contacts and co-operation between teachers with the same pupils. The idea was to make a collective approach to problems of communication between pupils and teachers and between teachers and parents and to experiment with new teaching procedures such as group work.

The number of teachers who volunteered for this experiment made it possible to take over two classes. Sometimes the classes met separately, sometimes in a plenary group.

The experiment required the approval of the headmaster as the teachers concerned had to be assigned to the same classes and their timetables organised so as to ensure that the period selected for meetings would find all teachers free. Furthermore the Ministry had just made public its decision to support teaching innovations. The teachers engaged in the experiment were therefore entitled to ask for time off from their teaching duties to take part in the necessary research and consultations. In this particular case, the Ministry of Education was unable to reduce the teaching hours but granted each teacher an hour's extra pay per week for the period of one year (this was reduced by half with effect from the second year of the experiment).

This project was a response to the intense need felt by the teachers concerned to break out of their isolation and work with other teachers. It was also a reaction to the rejection of

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educational standards and procedures by the pupils. The teachers felt that if they were to continue to exercise their profession it was essential to establish other relations with their pupils and be accepted by them.

Three objectives emerged from the initial consultations :

- to break fresh ground : this meant rethinking and re-planning all aspects of teaching, i.e. classroom practice, relations with pupils and institutional problems; in order to meet the needs of the pupils. The central problem was of course present-day educational objectives ;
- to promote further training for teachers : this called for an understanding of attitudes and motivations, a clarification of the teaching project, an attempt to obtain information and training not only in individual school subjects but also in teaching as a whole (pupil-centred teaching, group work, etc.);
- to organise research on the changing school environment, particularly for the psychologists.

In the two years in which the experiment has been going on various innovations have been introduced :

- teachers have visited the classes of their colleagues in other disciplines and watched them at work ;
- inter-disciplinary co-ordination has made it possible to link up several syllabuses around common themes. Debates have been organised among all the teachers concerned with the particular class and have been occasionally attended by the psychologists, acting as a stimulating element ;
- self-discipline has been instituted ;
- the pupils have been invited to a preparatory meeting of the class council at which the problems on the agenda have been discussed with them ;
- meetings between teachers, pupils and psychologists and meetings of parents, teachers, pupils and psychologists have been organised to review the progress made by each class.

If the teachers at Versailles are seeking a new role it is because they feel that they have been divested of the role they played up to 1968. They have lost "the illusion that they are the privileged dispensers of knowledge" and have realised that the pupils, in their relationships with them, are no longer inhibited by respect. They have begun to doubt the value of their activity. They do not feel that their teaching objective (to communicate

particular knowledge or bring home a particular problem) is "important or necessary to their pupils". The teacher no longer had the feeling of inner security fostered by the idea that he is a model for his pupils just as his own teacher provided an immutable teacher image for him. The realisation of this change and the deep dissatisfaction felt by adolescents with their families, their educational system and society at large has led the teachers at Versailles to challenge their own role at every turn :

- their role as adults in a community is often felt by young people as repressive : what is to be done to give young people a reassuring image of themselves as benevolent allies rather than watchdogs of the society they criticise without drifting into paternalism ? What is to be done to win the students' confidence but avoid the appearance of complicity in their turbulence or nihilism ?
- their role as teachers : listening to their pupils and asking them to state their views at discussions or in group work does not necessarily reduce teachers to the role of a group leaders. They continue to be adults who have knowledge to impart. The problem is therefore to co-ordinate the various ways in which they can intervene, such as by helping their pupils to express themselves, to make a decision in the choice of subject for study and the organisation of work and by providing information.
- their role as reformers within the educational system : conducting an experiment which affects all aspects of teaching practice means testing possibilities of change which concern all teachers. As an extension to the innovations they introduce into their classroom practice teachers are bound to keep themselves informed on the general progress of the experiment by consulting their colleagues, obtaining information on other experience outside the school and participating in symposiums or seminars dealing with the teacher's role.

The main feature of this experiment is its openmindedness. No model has been adopted as a base for the teacher's new role, and the responses of the participants to the problems which successively arise may be very diverse. A particular and constantly recurring theme is the actual limit of the teacher's role among his pupils. What language can he use and what can he be to his pupils ? The only principle is that relations with the pupils depend to a large degree on the relations between the teachers in the

educational team. The freedom the teachers are prepared to offer the pupils is directly if not always clearly related to the freedom the teachers have or can take within the school.

For this reason the many obstacles which slow down an experiment of this kind are part of the experiment itself. There is an echo here of the tenets of "institutional" teaching centred on the analysis of the constraints, the limitations and resources of the teaching institution and the attempt to develop a strategy which will gradually widen the field of initiative.

The educational team at Versailles has had to contend with administrative interferences, for example the refusal to admit psychologists to the school until official permission reached the headmistress's office (this forced the teachers to hold working meetings in their own homes), the refusal to give teachers a room after 5.00 p.m. for reasons of "safety", the uncertainty at the beginning of each school year as to whether the necessary permission would be renewed and whether the teachers would continue to draw overtime pay, etc. But there is also the resistance of the educational system to any concerted, inter-disciplinary approach. The rigidity of teachers' timetables and official duties prevent them from organising joint activities. It is difficult to initiate new relationships with a class of pupils and enhance the pupils' liberty in a school which continues to be run on traditional lines. The anxiety of the authorities, the other teachers and in some cases the parents when confronted with an innovation which disrupts conventional class procedure creates an unpropitious atmosphere in which the progressively-minded teachers fluctuate between hopelessness and subversion.

A teaching team of this kind also has to overcome its own internal problems caused by the diversity of its make-up. The training its members have had, their motivations as teachers and innovators, their teaching projects and their political views are all dissimilar. Certain teachers fall by the wayside, others join the team. The efforts of the members of the team to adjust to one another, with the aid of the psychologists, is an aspect of the experiment which takes up a good deal of time. But mutual adjustment is an essential condition on which depends not only any joint decision but also the internal dynamics of the team.

II. EXPERIMENTS IN "INSTITUTIONAL" TEACHING

A number of experiments in "institutional" teaching have taken place since 1962. They have always arisen from the personal initiative of a teacher (primary or secondary school) who decides to change the pattern of authority in the group-class. This means that the redefinition of the teacher's role is not the more or less direct consequence of some teaching innovation but is the actual subject of the initial change. On this initial basis every sort of development is possible in connection with methods, programming, testing of progress, etc.

"Institutional" teaching is based on a criticism of teacher domination in the classroom. However, the teacher/pupil relationship is not analysed in the same terms by all the theoreticians of "institutional" teaching. Vasquez and Oury blame the two-way relationship between teacher and pupil. These authors contend that however it is utilised (more or less authoritatively, more or less permissively), teacher domination never offers any more than a purely theoretical reciprocity. "Institutional" teaching provides a third element, i.e. the mediation which makes real communication possible. "For example, the correspondent, the class newspaper, an object the class is making or the survey the class is engaged on offer the teacher and the pupils individually and collectively a subject to talk about and an opportunity of communication..." (1). These activities make it necessary to lay down rules and determine functions, thus an "institutional" or decision-making authority is created within the group-class. This is, among other things, the purpose of the "Council" where teachers and pupils exchange their opinions, suggestions and proposals, and where decisions are taken.

The criticisms of Lapassade and Lobrot are levelled at the bureaucratic nature of the teaching system which creates alienating relationships at all levels of the hierarchy and particularly in the group-class. This bureaucratic control should be broken. To let the pupils express themselves and create a situation in which they can put forward their requests implies that the teacher is prepared to give up his prerogatives and privileges. The analysis of the group reactions and the switch from teacher-centred control pave the way for free expression and contestation. In the absence

1) A. Vasquez and F. Oury, De la classe coopérative à la pédagogie institutionnelle, p. 683 (From the Co-operative Class to Institutional Teaching).

of teacher-control the pupils are left to themselves to determine their objectives, procedures and timetable. This leads to collective management. The pupils have then to contend directly with the system of external constraints (timetables, syllabuses, examinations, school rules, etc.) ; they are brought face to face with the problems of organising and regulating their group and at the same time are provided with the various resources with which to meet these problems, such as publications, documents, illustrations and information via the teacher and their comrades.

Experiments in institutional teaching take different practical forms, some more radical than others, according to the basic ideas which prompt them, the level of the class and the training and personal ability of the teacher. The objectives themselves vary widely and differ in their significance in each particular case. For example, the intention may be to achieve one or more of the following aims :

- To overcome the boredom of schoolwork by changing the teaching process into an adventure into which the persons concerned throw themselves wholeheartedly.
- To use this method to enrich the work of the class and achieve greater efficiency in the pursuit of actual educational objectives.
- To extend the scope of education from the conventional intellectual sphere to personality training with an initiation into the life of the community and the co-operative approach.
- To make the class a place where everyone has the right to exist, express his wishes and exercise an activity which is really his own.
- To train pupils to challenge the social system and its standards.
- To analyse the contradictions in the educational system, the experiments being, according to Lourau, "tools of knowledge rather than examples of method", particularly by allowing for the latent function of the "institution".

"Institutional" teaching experiments have been prompted or shaped by several models which are on the borderland of psychotherapy, social psychology and economics, which include the following :

- the "institutional" psycho-therapy model. Indeed, in the past 25 years the practices based on "institutional" analysis and

collective management have been the subject of research in psychiatric institutions ;

- the pupil-centred model worked out by Rogers, on the basis of psycho-therapy practice and subsequently extended to all types of communication (discussions with pupils to aid them or investigate their problems, etc.) and the teacher/pupil relationship ;
- the training group, therapy group or sub-group model in which training objectives are pursued through an analysis of the interactions between the participants in the situation ;
- the self-governing model, defining a procedure in which production and community life are collectively organised by all parties concerned.

As we point out above, the main feature of "institutional" teaching experiments is that they reshape the pattern of roles in the group-class. In all efforts made in this direction there is always at the outset the belief that the charismatic role from which the teacher traditionally derives his status is a delusion and rather ridiculous. His refusal to assume this role and thus reduce the pupil to a recipient, a docile subordinate or an imitator leads the teacher to embark on a process of exploration of the educational situation. It is not possible to decide what his own role will be until he has set out clearly its various elements : the institutional constraints, the scope for personal initiative, the desires and requests of the pupils, the determination of objectives and tasks. But this process is never completed because the gradual revelation of the multiple aspects of the situation is constantly changing the situation and calling for new adjustments.

In other words the role of the teacher is constantly being challenged. He oscillates between several poles :

- The group leader

he is attentive to the views of each pupil, analysing the attitudes, the interaction and the evolution of the group and analysing and regulating the action of the group.

- The work organiser

suggesting modes of operation, aiding the pupils in decision-making and in supervising the implementation of their decisions.

• The expert providing

information or hints on method in his particular field and bringing home the limitations and uncertainties of these methods to his pupils.

• The propagandist

revealing the socio-political implications of the teacher's function, the contradictions of the educational system and the affinities between teaching and other social practices.

In referring to models of roles outside teaching practice, "institutional" teaching does not stop short at building a new model for the teacher's role. The important point is that it makes it necessary to reconsider the different dimensions in a role which at present is rather ambiguous. It is clear that each of these dimensions is at least virtually present in any teaching relationship. What is new is the analysis which specifies the dimensions and above all the fact that this analysis itself becomes a major dimension in teaching practice. The difficulties and conflicts which arise at each stage are the same as those experienced by any teacher facing a class but in most cases they remain hidden and unrecognised. Here they are brought into the light of day and dealt with by the group-class in the context of the "institution". They are in the main :

- turning the class over to collective management means that the teacher gives up part if not all of the authority which is vested in him by the institution. And yet it is he who grants the charter ; he is still the adult among the younger generation and he is still regarded as responsible. Should he deny this and behave as if his status was abolished ? His pupils are not deceived. Does this therefore mean that the whole thing is a game to which the players more or less lend themselves but which always reverts to the master-subordinate relationship which it was hoped to eliminate ?
- as far as the transmission of knowledge is concerned, can the teacher be anything but a privileged mediator, i.e. the person who knows what has to be known ? When can he make his contribution as a teacher without short-circuiting the pupils' learning process ? Is it adequate if he restricts himself on principle merely to answering pupils' questions, considering that those questions sometimes reflect the pupil's desire to seek security by leaving everything to the adult as in the early stages of childhood ?

- how is one to represent the standards and values of the institution and the community in the eyes of the pupils when not only does one not subscribe to them but even opposes them ? If the teacher refuses to represent these standards and values and chooses to deviate is he not concealing the truth from his pupils and arousing their anxiety ?

Consequently, what the teacher does, what he does not do, whether his intervention is timely or untimely, what a particular attitude might signify are so many ever-present problems, and in finding an answer to them the teacher has to steer a course between the risk of manipulating his pupils or of depriving them of a refuge from their anxieties.

It is obvious that a venture of this kind, which not only affects the deepest aspects of the relationship between teachers and pupils and the existence of the group-class but is also a challenge to the educational system, is viewed both by its participants and outside observers as a hazardous undertaking and consequently encounters all kinds of resistance, including :

- Resistance from the pupils who are suddenly placed in a situation where they no longer find the models and references which guided them previously.
- Resistance on the part of the parents who are alarmed about the effects on their children's education of a type of teaching which seems to be a challenge to normal standards and turns its back on the acquisition and testing of knowledge.
- Resistance of colleagues to an experiment which questions their own role and which might be contagious and arouse revolt in their own classes.
- Resistance from the educational system which defends itself against the challenge and fears that it will no longer be able to control the development of similar schemes. For example, a circular issued in January 1971 ordered teachers who had undertaken a teaching experiment and particularly those who were practising pupil-centred education in their classroom to put an end to the experiment if they had not obtained permission to continue it from the responsible authorities.
- Resistance from the very people who had thrown themselves into institutional teaching but who are not strong enough or sufficiently trained to face up to its uncertainties.

III

CONCLUSION

The innovations we have successively examined show a wide range of differences in their content and scope. They have one feature in common, namely they involve a change in teaching practice which is far-reaching enough to challenge the role of the teacher even when this result was not one of the initial objectives. Although emphasis is laid on different specific features in each of these experiments, it is clear that when these are put together they present a new image of the teacher.

We propose to consider them from three aspects : the dynamics of innovation, the problems of the teacher's role and the lines of convergence which emerge from the survey.

A. THE DYNAMICS OF INNOVATION

The efforts made in the past few years by teachers and educational planners to introduce innovations are a response to the crisis which affects the whole of the French educational system. They stem from an analysis which not only reveals the dysfunctions of the educational system in a changing society (lack of flexibility, inefficiency outdated symbols of authority, a division between the educational system and everyday life, etc.) but also the role of the school in contributing to the reproduction of a class-ridden society (educational mechanisms which reinforce socio-cultural disparities). The essential objective of innovation is to make good these deficiencies or correct their injurious effects although generally its aim is to prepare for the future. The terms used, such as "the new school", "the educational system of tomorrow", "pilot educational experiments", etc., are significant in this respect : they not only offer a model for the future but show that it is possible to achieve this model here and now within certain limits and on certain conditions.

But neither the analyses of the educational crisis nor the development of models for the future are sufficient to account for the emergence in a particular locality of an educational innovation which mobilises more than common energy on the part of those who launch it and is bound to entail strains and stresses. Enterprises of this kind are the result of strong motivation which often originates from a feeling of discontent among the teachers (a sense of isolation, of impotence and of a devaluation of their work) or from unrest among the pupils, their parents and ultimately the community as a whole which exerts pressure on the educational authorities and the government. These motivations may also, to a greater or lesser extent, be bound up with others of a more positive nature, such as an urge for greater action, for other forms of communication and other relationships, a desire to use modern techniques and to give others as well as oneself a different image of the teacher.

The objectives of innovation are to a greater or lesser extent expressed in functional, psychological or ideological terms. These envisage revitalising the educational and promotional functions of the school, which can no longer be relied upon in a constantly changing social and cultural context unless readjusted to ensure modernisation, democratisation and the adoption of a more dynamic approach to school life. In certain cases these objectives go beyond readjustment and call for entirely new thinking on the social functions of the educational system, on the role of the teacher and on the distinction between life in school and outside and between an individual's training, his career and his leisure. Sometimes they even go beyond the educational system, insisting that innovations should expose the contradictions inherent in the social system and emphasize the contribution of the school to the preparation for revolutionary action.

It is clear that according to the objectives pursued, their point of departure and the type of change introduced into teaching practice, an innovation may have differing and even conflicting implications not only for its promoters but also for those who resist the disruption it causes in their habits and relationships. This depends on the extent to which it is envisaged as emancipating or disturbing and the degree to which it is foreseeable and controllable.

One fact emerges from the analyses we have made, i.e. that an innovation is never limited to the variable on which action is concentrated but always releases a chain reaction which gradually

leads to a transformation of the relationship between teacher and pupil and in any case changes the teacher's role in his class and in his school.

For this reason an innovation always acts as an instrument of analysis in an educational situation. The institution of new techniques, the incorporation of individual schools into a socio-cultural unit, the reorganisation of timetables and redefinition of subjects, the adoption of group work and the co-operation of teachers in research makes it essential to rethink all the educational problems which are usually sidestepped, namely the precise definition of aims and objectives, the choice of a strategy, the supervision of operations, the determination of criteria for assessing the results, the pattern of roles, the relevance of norms, attitudes to the institution. As a result, the effects of a specific change can never be accurately evaluated. In reality, this type of evaluation is pointless, not only because no single variable can be isolated but because the major effect of any innovation is to release a process of change which constantly modifies the initial problem which one was trying to solve.

The same applies to the resistance encountered by innovation. At first sight certain obstacles are clearly recognisable either in organisations or in attitudes, such as the division of the timetable, the barriers between disciplines, the organisation of the teacher's working day, the layout of classrooms, the demands of examinations, the stereotyped image of teachers, the inspector's obsessions. These are real obstacles, but they can also serve to conceal further resistance to change. They come in for ready criticism and it might be thought sufficient to remove them (introduce another timetable, establish other examination procedures, reclassify pupils by level of achievement rather than by age-group, change the inspector and so forth) to enable the innovation to develop and achieve its objectives. But sooner or later it becomes obvious that it is not a particular type of structure, method or attitude which is an obstacle in itself to the innovation effort but rather the rigidity of a structure, a method or an attitude. The very idea of an experiment, by definition something new, sometimes drives a team into a sterile conformity.

B. PROBLEMS OF THE TEACHER'S ROLE

As we have seen, certain innovations have centred on changing the teacher's role while others, though directed at other factors in the educational situation, have inevitably been forced to reconsider the teacher's role in all its aspects.

Let us first consider the role of the teacher in releasing and developing the innovation process.

There are two extreme cases : either the innovation is introduced by the authorities (the Ministry of Education, the inspector, the head of the school) or it is initiated by the teachers or even by one teacher.

In the first case (transition classes, the experiments at Tours, in the 20th Arrondissement, at Yerres, and La Source) the problem is to discover what the teacher's role is and how he is to tackle it.

In this case the project belongs to those who planned the innovation and introduced the relevant structures. The teachers (and the parents and pupils too) have to participate in the project on terms about which they have not been consulted. They may be considered as the instruments of the change. They are expected to support it, to agree to channel their efforts in the direction judged desirable. The main obstacle encountered by the promoters of the experiment (apart from any material and administrative obstacles to the full implementation of their project) is the resistance to change among teachers. "Resistance to change is at least the focus of their criticism and they propose to break this down either by the compelling effect of the new structures or by training schemes.

But as far as the teachers, or at least certain of them, are concerned, it is not so much a question of resistance to change but of resistance to a type of change which is not in line with their own project and in which they cannot in any event participate so long as the objectives and procedures of this change are imposed upon them.

In the favourable climate of an innovating school, however, a number of other tentative innovation schemes are apt to develop which deviate from the original project. In this case the teachers encounter obstacles to their innovation schemes not only from the authorities resisting the distortion thus introduced but also occasionally from the parents who are alarmed by these new schemes. In this way, all innovating experiments organised and controlled

by the authorities are threatened and go through periods of crisis in which the original planners begin to doubt the meaning of their project. The innovation may therefore be brought to a halt or enriched, according to the degree of flexibility of the system introduced. The educational system is sometimes more and sometimes less prepared to agree that the teacher may be not only an agent of innovation but is also himself an innovator, free to readjust or to rechannel the project proposed to him.

This flexibility in structures and attitudes is severely tested when innovation is introduced by an individual teacher into his own class (e.g. the experiments in "institutional" teaching) or by a group of teachers (the educational group at the Lycée de Versailles). When the innovation (and this frequently occurs) involves giving the pupils their autonomy, the teacher needs a fund of goodwill which his superiors, the parents and even the pupils are not equally prepared to grant him. The freedom the teacher may introduce into his classroom depends on the freedom he is himself afforded or which he succeeds in claiming from the school.

Between these two extremes there is a whole range of situations in which a joint project can be worked out among the teachers and the educational planners, i.e. voluntary participation, the removal of certain institutional constraints, regular consultation as the experiment proceeds and tolerance, likely to foster reciprocal adjustments, for certain differences in style and personal initiative. Nevertheless, the ambiguities which affect the status and role of the teacher always loom large in any pilot situation: the teacher is caught between the danger of being either the zealous or the resigned agent of a project for which others take credit (such as the head of the school, the inspector, or the research worker) or that of appearing to be a lone fighter who can carry through his project only when he is in opposition and has the consensus of opinion against him.

Apart from the problems caused by the role he plays in the innovation project the teacher engaged in a pilot experiment is confronted by a number of other dilemmas:

- In his classroom: the teacher increasingly considers his main task to be to animate his pupils, not to transmit knowledge. His role henceforth consists in getting the pupils to express themselves, stimulating and assisting them in their learning process and helping them to co-operate with one another and criticise themselves. In this connection one talks

of free activity, or undirected education, or group-centred education with the teacher playing the part of a leader of a therapy group. Nevertheless, some direct teaching is still necessary. The constantly recurring problem for the teacher is how to introduce his direct-teaching opportunely without reverting to a type of relationship in which the pupil is reduced to a passive role. The use of audio-visual or any other media is likely to promote pupil-centred teaching and oblige teachers and pupils to change their relationships.

- In the institution : the teacher's role will have to be re-designed in view of the increasing part played by a number of specialists, such as documentalists, psychologists, vocational guidance counsellors, audio-visual technicians, re-educators. In the view of this diversification of functions which were previously merged the teacher may tend to confine himself to the role of specialist in his discipline but it is obvious that his contribution to all the aspects of what has become a highly complex educational process is more than ever necessary.
- In the community : the respective tasks of the parents and the teachers in the education of young people has ceased to be as clearly defined as in the past. The pre-established harmony which existed, particularly at secondary-school level, between teachers and parents who had generally pursued their studies up to university level no longer exists. Teachers now have the responsibility for giving their pupils the support in their studies and the civic training which was previously a matter for parents. Accordingly, they sometimes tend to oppose any intervention by the parents whom they consider incompetent and conservative. They often undertake to inform them however and even to associate them with the day-to-day proceedings of the class.

More generally, as we have seen, teachers are uncertain of the role they are assigned and can assign to themselves in a social structure and a system of values to which they are often opposed. Can one be a teacher without contributing to "adapt" and select ? May a teacher arouse his pupils to rebel and refuse ?

C. LINES OF CONVERGENCE

These problems remain unanswered. The teacher is obliged to rediscover his role amidst a sea of contradictions. Pilot experiments endeavour to produce answers to these problems at one level or another. Several points of convergence emerge from a comparison of these experiments.

1. The Team

No teacher can overcome the problems which confront him if he continues to face his class alone. Everywhere teams are forming with varying compositions : some consist of teachers from a single class or level, while others associate teachers, psychologists, re-educators, vocational guidance counsellors, etc. There are also research teams and inter-level teams.

Whether it is institutionalised or spontaneous, the team is designed to meet several requirements :

- it represents a way of taking collective responsibility for a situation in which teachers and pupils are threatened with dispersion and incoherence. With a team, it is possible if not to standardize at least to co-ordinate the various disciplines, organise inter-disciplinary activities, adjust standards and evaluation procedures. The team stimulates creativity ; suggestions are put forward, developed and corrected ;
- the team is mainly a protection against the isolation which is generally the lot of the teacher in the compartmentalised educational world. The need to find security in discussion, to express uncertainty and difficulties and to pool experience seems to be the strongest motivation. The team is also a protection against pressure by the administration, the parents and the pupils. It is likewise a protection against oneself ; against the anxiety, impulses and process of transference to which one is subject when one is engaged like the teacher in a pattern of far-reaching personal relationships ;
- the team may be a place for joint thinking on the teacher's role, a kind of "Balint Group" where the analysis of personal attitudes and inter-personal relationships, possibly with the aid of a psychologist, may be a medium for in-depth training.

In whatever form it occurs, participation in a team often tends to become a major preoccupation in the teacher's professional life. The proportion of his activity outside the class increases and becomes the key to his activity in the class.

2. The Sharing of Authority

The teacher's absolute authority in his classroom, hitherto exercised with all the more satisfaction because he is powerless outside the classroom and entirely subject to the decisions of the educational hierarchy, is being challenged in various ways.

The teacher's authority is primarily derived from the fact that he is the only one who possesses certain knowledge. His knowledge is two-fold. It consists partly of the book learning he has to transmit and partly of his knowledge of the pupils, his ability to evaluate their abilities, their results and their chances of success. But today the pupils' access to knowledge is not necessarily via the teacher as young people can obtain considerable information from books and mass media. Even in class, the audio-visual message has superseded direct-teaching.

Nor is the teacher's knowledge of his pupils his almost exclusive privilege : the psychologist, the vocational guidance counsellor and the other educators are also entitled to make known their views about the pupils and intervene in any decisions concerning them.

The teacher's authority also represents the authority of the institution, that is the power to organise, determine work assignments, decide on points of discipline and mete out punishment. It is obvious that in all the pilot experiments we have reported, the effort to make the pupils more autonomous, individually and collectively, has led to various joint-power formulas which border on complete autonomy and more or less limit the authority of the teacher. The sharing of authority in the classroom between the teacher and the pupils is bound to have repercussions on the power pattern in the institution. In as much as he divests himself of a proportion of his authority in the classroom the teacher is likely to claim greater authority in the context of the school or at least the autonomy necessary to guarantee that the pupils will be allowed to keep the autonomy he has given them. Negotiation becomes an important factor in practical teaching.

3. Indirect Action

Another point of convergence is the increasingly indirect nature of the teaching process. By this we mean that instead of teaching, i.e., transmitting his knowledge directly, the teacher endeavours to create situations or bring about conditions which enable the pupils to learn in their own way and at their own rate. The result is that the teacher listens to his pupils, helps them to analyse their difficulties and holds himself ready to intervene on request. Organising the learning environment is now tending to become the teacher's main function, while direct teaching is less frequent.

This also applies to evaluation : instead of judging and rating his pupils' output the teacher tries to introduce a feedback system enabling the pupils to evaluate themselves and correct their own procedures as they go along.

4. The Link with Research

To enable the teaching process to be adjusted with maximum efficiency to the new requirements, it is essential to develop the educational sciences ; the teacher can both benefit from these and contribute to their development.

Educational innovation does not in itself constitute research in the scientific sense of the term. But any teaching process and particularly any innovation in the process may become subjects for research if their effects are systematically noted, analysed and interpreted. As we have already seen, the teachers in the 20th Arrondissement and those at La Source and the CES at Marly-le-Roi have devoted part of their activity to co-operating with researchers. Even if his personal involvement makes it difficult for a teacher to conduct research himself in his own classroom, his role as a teacher would acquire an additional dimension if he participated in a research assignment with the methodological and ethical exigencies which this implies. He would be not only a practitioner but a specialist in educational action as well.

5. The Contamination of External Models

The emergence of many new aspects in the teacher's role and the vagueness of his new image make it necessary to seek for fresh points of reference from a number of different social roles where the models are more clearly defined, such as socio-cultural group leader, specialised educator, social psychologist, social worker,

political militant, etc. The models are sometimes explicitly referred to but the reference is often implicit. A comparison with these functions assists the teacher in his present quest to make his own role more specific.

6. The Need for Training and Further Training

The main difficulty commonly encountered by teachers who are trying to change their teaching approach is the absence of inadequacy of appropriate training. In addition to initial and further training in the teaching of their discipline two other types of course are particularly in demand ; first, the use of audio-visual and other techniques and, secondly, the social-psychological approach to communications and group leadership.

7. Criticising the Institution

A final point of convergence which must be noted in the different experiments is the feeling of impotence which arises sooner or later in the development of an innovation when the teacher encounters the institutional constraints of a rigid centralised system. The relaxation of existing regulations (hours of service, timetable, syllabuses, examinations, inspection) is demanded as an essential condition for the transformation of the teaching function.

Annex I

TABLE SUMMARISING THE CHARACTERISTICS
OF THE INNOVATIONS STUDIED

- **Objectives of the innovation**
- **Innovating body**
- **Nature of the innovation** (if it is a type of change which has been deliberately introduced at the outset)
- **Associated changes** (changes deliberately introduced or changes which are the more or less controlled consequences of innovation)
- **Teacher's classroom role**
- **Teacher's school role**
- **Role models** (these are sometimes explicit models introduced by the innovators and sometimes implicit models which may have been borrowed from functions other than teaching and whose influence has been recognised in our analytical studies).

	Objectives of the innovation	Innovating body	Nature of the innovation
<u>Transition classes</u>	Re-adaptation and retraining of pupils who are "outside the circuit"	Ministry of Education	Creation of an educational cycle
<u>Organised day in the Académie de Tours</u>	Stimulating the school as a whole Demonstration of the possibilities of change	The Académie inspector	Total application of the organised day Development of audio-visual equipment Removal of barriers between subjects
<u>Experiment in the 20th Arrondissement</u>	Taking over responsibility for the school's educational and promotional functions - improvement of teaching efficiency - democratisation - planning for the future	District inspector	Change in educational structures at the level of an Arrondissement
<u>Centre d'éducation et de culture, Yverges</u>	Integration of the educational system into the life of the community Process of permanent education	Ministry of Education and local authorities	Combination of a CES with a socio-cultural unit
<u>Experimental CES at Marly-le-Roi</u>	Modernisation of the educational system Democratisation	Ministry of Education (Institut pédagogique national)	Experiments on the intensive use of closed-circuit television

Associated changes	Teacher's classroom role	Teacher's school role	Role models
<ul style="list-style-type: none"> - Abolition of syllabuses and fixed divisions of the timetable - A single teacher - Pupils limited to 25 - Reformed teaching methods - Training courses for teachers 	<ul style="list-style-type: none"> - Organisation - Stimulating pupils - Guidance - Psychological and educational help 	<ul style="list-style-type: none"> - Helping out children in difficulties 	<ul style="list-style-type: none"> - Teaching using active methods - Re-educator
<ul style="list-style-type: none"> - Formation of teacher teams - Redefinition of the teacher's service - Teaching by television - Co-operation with cultural organisations 	<ul style="list-style-type: none"> - Stimulating pupils 	<ul style="list-style-type: none"> - Co-operation among teachers - Differentiated roles : co-ordinator, specialist in photography, television, etc. 	<ul style="list-style-type: none"> - Socio-cultural leader - Sports organiser - "Creative adult"
<ul style="list-style-type: none"> - Education teams - Modern teaching techniques - Action to set up clubs, and councils and introduce new types of inspection, etc. - Teaching research 	<ul style="list-style-type: none"> - Organiser-group leader - Source of information - Educational technician 	<ul style="list-style-type: none"> - Member of the educational team - Co-operator in research - Educational pioneer 	<ul style="list-style-type: none"> - Teacher using active methods - Experimentalist - Militant - Leader/social psychologist
<ul style="list-style-type: none"> - Removal of classroom partitions, All-purpose equipment - Osmosis between school subjects and cultural education - Formation of educational teams 	<ul style="list-style-type: none"> - Stimulating pupils (for certain teachers) 	<ul style="list-style-type: none"> - Dual role as teacher and leader of sporting or socio-cultural activities - Formation of an educational team 	<ul style="list-style-type: none"> - Socio-cultural leader - Social psychologist (for certain teachers)
<ul style="list-style-type: none"> - Functional architecture - Audio-visual equipment - Full-time educational work - Team work : <ul style="list-style-type: none"> - teachers - researchers - technicians - Reorganisation of teaching practices: division of the timetable into phases, work in classes, half-classes and small groups alternately - Reform-compelling structure 	<ul style="list-style-type: none"> - Group leader (or-organisation of work and group-leading) - Source of information 	<ul style="list-style-type: none"> - Member of various working groups for : <ul style="list-style-type: none"> - production of "soft-ware" - utilisation - research (roles differentiated according to specialities and interests) 	<ul style="list-style-type: none"> - Technician - Executive - Leader

	Objectives of the innovation	Innovating body	Nature of the innovation	Associated changes	Teacher's classroom role	Teacher's school role
<u>A new school : La Source</u>	Introduce a new style of school life	Private initiative	Creation of a "home for children", parents and teachers	<ul style="list-style-type: none"> - Setting unlike that of a normal school - More flexible educational organisation - Active methods - Teachers recruited for their personality - Educational team - Participation of researchers - Co-operation of parents 	<ul style="list-style-type: none"> - Observation - Individual aid - Direct teaching where requested - Group-leading - Stimulating pupils 	Member of the educational team Innovator
<u>Educational team, Versailles</u>	<ul style="list-style-type: none"> - Change in teacher-pupil relationships - Rediscovery of the teacher's role 	<ul style="list-style-type: none"> - A group of teachers - Assistance from the Ministry for "educational experiments" 	<ul style="list-style-type: none"> - Formation of educational team consisting of teachers and psychologists in experimental classes 	<ul style="list-style-type: none"> - Weekly meetings of teachers and psychologists - Co-ordination of disciplines - Interdisciplinary discussions - Self-discipline - Group-work - Meetings of teachers-pupils-psychologists - Meetings of teachers-pupils-parents-psychologists 	<ul style="list-style-type: none"> - Organisation - Direct teaching - Stimulating pupils - Advising 	Contribution to change in teacher/pupil relationships
<u>Experiments with "institutional teaching"</u>	<ul style="list-style-type: none"> - Redefinition of the teacher's role - Challenge to the institution 	Initiative of a teacher	Institution of collective management in the classroom	<ul style="list-style-type: none"> - Removal of teacher control - Use of intermediaries - "Institutional analysis" 	<ul style="list-style-type: none"> - Group-leading - Organisation - Provision of information 	<ul style="list-style-type: none"> - Analyser - Propagandist

Innovating body	Nature of the innovation	Associated changes	Teacher's classroom role	Teacher's school role	Role models
Private initiative	Creation of a "home for children", parents and teachers	<ul style="list-style-type: none"> - Setting unlike that of a normal school - More flexible educational organisation - Active methods - Teachers recruited for their personality - Educational team - Participation of researchers - Co-operation of parents 	<ul style="list-style-type: none"> - Observation - Individual aid - Direct teaching where requested - Group-leading - Stimulating pupils 	Member of the educational team Innovator	<ul style="list-style-type: none"> - Holiday camp group-leader - Educator - Leader and helper
A group of teachers Assistance from the Ministry for "educational experiments"	<ul style="list-style-type: none"> - Formation of educational team consisting of teachers and psychologists in experimental classes 	<ul style="list-style-type: none"> - Weekly meetings of teachers and psychologists - Co-ordination of disciplines - Interdisciplinary discussions - Self-discipline - Group-work - Meetings of teachers-pupils-psychologists - Meetings of teachers-pupils-parents-psychologists 	<ul style="list-style-type: none"> - Organisation - Direct teaching - Stimulating pupils - Advising 	Contribution to change in teacher/pupil relationships	<ul style="list-style-type: none"> - Educator - Militant
Initiative of a teacher	Institution of collective management in the classroom	<ul style="list-style-type: none"> - Removal of teacher control - Use of inter-diaries - "Institutional analysis" 	<ul style="list-style-type: none"> - Group-leading - Organisation - Provision of information 	<ul style="list-style-type: none"> - Analyser - Propagandist 	<ul style="list-style-type: none"> - Training-group leader - Militant

Annex II

SOURCES

A. Transition classes

- Conversations with teachers in transition classes.
- Documents : - Official texts,
 - Cahiers pédagogiques, No. 68, May 1967(Documents analysed with the co-operation of Chantal Viveret).

B. The organised day in the Académie de Tours

- Visit to schools.
- Conversations : - with the inspector of the Académie,
 - with head teachers,
 - with teachers and pupils.
- Documents : - diary of an organised day in the Department of Indre-et-Loire.

C. Experiment in the 20th arrondissement, Paris

- Documents : A la recherche de l'école de demain (The quest for tomorrow's schools) by the Groupe de pédagogie active du 20ème arrondissement de Paris under the direction of R. Gloton, Collection Bourrolier. Armand Colin, Paris, 1970. (Documents analysed with the collaboration of Jaquette Léger).

D. The Centre éducatif et culturel de Yverges

- Visit to the Centre.
- Conversations : - with the head of the Centre,
 - with teachers.

E. The experimental CES at Marly-le-Roi

- Documents : Mimeographed documents issued by the Institut pédagogique national.
Cahiers pédagogiques, No. 90, April 1970.

F. A new school : La Source

- Conversations : - with the headmistress,
- with a group of teachers,
- with pupils.
- Documents : Education et développement, No. 14, January 1966 ; No. 30, September 1967 ; Texts issued by the school for the use of parents,
"Tip-Top", periodical published by La Source.

G. An experiment with an educational team in a lycée in the Paris region

- Conversations : - with the headmistress,
- with the teachers,
- with the pupils,
- with the psychologists.

H. Experiments with "institutional teaching"

- Conversations with teachers.
- Documents : - G. Lapassade : Groupes, organisations et institutions (Groups, organisations and institutions). Gauthier-Villars, Paris, 1967.
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- A. Vasquez and P. Oury : Vers une pédagogie institutionnelle (Towards "institutional" teaching). Maspéro, Paris, 1967. De la classe coopérative à la pédagogie institutionnelle (From the co-operative class to "institutional" teaching). Maspéro, Paris, 1971.

III

THE ROLE OF THE TEACHER IN SELECTED INNOVATIVE SCHOOLS IN THE UNITED KINGDOM

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1465

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SUMMARY OF KEY ISSUES

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Teachers involved in the Keele Integrated Studies Project moved in the direction of integrated subject work organised through team teaching and using enquiry methods. The key issues in this innovation were :

1. The pressures on the innovating teachers :

- Through the time and energy involved.
- Through the difficulties in organising innovation in schools largely remaining traditional.
- Through their exposure to external assessment.
- Through their exposure to criticism from colleagues still involved in traditional classroom teaching.

2. The anxieties involved in innovation :

- Over the need to work in new subject areas.
- Over the separation from the security of subject teaching.
- Over the separation from the intimacy of classroom teaching.
- Over the career prospects in integrated studies.
- Over standards of work in integrated work where there were no established means of assessment.

3. The key issues in determining the success of the innovation :

- The initial investment made by the teachers and their schools. The heavier this initial investment the greater was the chance of the innovation persisting.
- The support from agencies outside the school such as Project team, local authority advisory staff and parents.
- The support from other teachers in the school not directly involved in the innovation.
- The support and involvement of the head teacher and senior members of staff.

4. The most successful cases of innovation took a pride in being in the public eye as innovators.
5. The material conditions of the schools did not seem crucial although teachers complained of lack of resources for innovation.
6. Three stages of innovation were distinguished. Of these, the introduction of the innovation into schools was the easiest. Sustaining the innovation proved more difficult. The prospects of the innovation becoming a normal part of these 38 schools seemed to depend on a combination of initial investment and continued support making the profit from the new exceed that from traditional methods.
7. The longitudinal research design was necessary as schools, local education authorities and the Project were all changing across the three years.
8. All the agencies in the above paragraph saw the Project in different ways determined by their own interests. Each applied its own criteria of success or failure therefore.

I

INTRODUCTION

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The Keele Integrated Studies Project was established in January 1968 with a grant from the Schools Council. It was concentrated in five local education authorities around the University of Keele where the Project team was based. The trial stage finished in August 1971 and was succeeded by a stage of diffusion aiming to spread the innovation nationally. The research on which this paper is based is an investigation into the process whereby decisions are made about curriculum changes and the way these proposals are implemented in schools. It is an independent research project financed by the Nuffield Foundation.

This paper is concerned with the changes in the role of the secondary school teachers involved, although the sample included one middle school catering for children aged 9 to 13 years.

The direction of the changes proposed by the Project for the role of the trial school teachers was as follows :

Traditional role

- a) Subject-based
- b) Teaching by instruction
- c) Teaching individually

Proposed role

- a) Subjects integrated
- b) Learning by enquiry
- c) Team-teaching

Three features of the project need understanding before the information that follows can be interpreted :

- 1) First, the changes outlined above were not the result of a blueprint imposed by the Project on trial schools. The Project made only requests for a flexible, unstructured approach to the introduction of integrated studies. The new role was proposed but not imposed. The schools added another innovation themselves. In most cases the innovation was used as an opportunity for using unstreamed groups in schools where

streaming was normal. This probably indicated a willingness to innovate as this project arrived.

- ii) Secondly, the integrated studies were introduced into only a minor part of the total work of the schools. The innovation was therefore surrounded by conventional class teaching in single subject disciplines. Furthermore, while history and geography were usually integrated, the actual combination of subjects involved varied widely between schools.
- iii) Thirdly, many schools were already moving towards the role proposed before the Project was established. This makes generalization dangerous. With a variety of starting points and an indication of objectives rather than a firm blueprint, it was difficult to establish anything more than the broad trends of developments.

A. THE ORGANISATION OF THE INNOVATION

The Keele Integrated Studies Project was established at the University of Keele under the direction of D.W. Bolam. The Project team consisted of six team members plus two or three Overseas Fellows. Four of the team were coordinators, involved in planning the Project but also linking it to the trial schools. Three of these were teachers seconded from the local education authorities concerned. The remaining coordinator was appointed by an authority from outside. All four were paid by the local authorities and developed intimate contact with the trial schools. Their job was partly to share planning, evaluation and the production of materials at the University and partly to help schools to innovate.

Thirty eight schools were involved in the Project between 1968 and 1971. They were composed as follows :

Trial period

1969-1970

- 3 Grammar schools (1)
- 3 Comprehensive schools
- 22 Modern schools
- 5 Junior High schools (2)

1970-1971

- 2 Grammar schools
- 4 Comprehensive schools
- 19 Modern schools
- 2 Junior High schools
- 1 Middle school (9-13 years)

- 1) One of these Grammar schools became a Comprehensive school within this period.
- 2) These schools were starting to become comprehensive during this period.

Some 220 teachers were involved with the Project, an average of six per school. All were engaged in some subject-teaching as well as integrated studies through some form of team-teaching. The commitment ranged from a small to a major portion of time to integrated studies.

The integrated work was based on six curriculum units consisting of collections of written and visual materials, guides to resources and suggestions for children's activities. Each unit contained broad themes for integrated work and they were not intended as a complete course. The titles were Exploration Man, Living Together, Communicating with Others, Development in West Africa, Outgroups in Society and Man made Man.

The schools that joined in the Project committed themselves to changes in organisation that would facilitate the introduction of integrated studies. The major commitments were :

- To plan the timetable to facilitate team-teaching and enquiry methods.
- To form teams of teachers willing to innovate.
- To provide the resources that would enable children to learn actively through individual or group work.
- To take an active part in feeding back ideas to the Project team based at Keele.

This was not only the acceptance of new content often strange to the teachers and involvement in team-teaching, but an invitation to develop in individual ways and feed the experience gained back into the Project. The four coordinators were appointed to establish the channels for this cooperative development between the Project team and the teachers in the trial schools. Furthermore, their employment by the local education authorities involved gave them an intimate knowledge of local schools and conditions, and linked them to the local advisory staff of these authorities who were also involved in developing curricula in the schools.

In this objective of actively involving teachers in the innovation and in providing coordinators specifically to promote this cooperation, the Keele Project has probably been unique. Hence it is an important experiment from which to examine the response of teachers to the invitation to innovate in their work and the conditions in schools and in curriculum projects that support or undermine innovation.

B. THE EVALUATION

Four categories of school were defined :

- 22 schools which worked within the Project in 1969/70 and again in 1970/71.
- 4 schools that worked within the Project in 1969/70 but then continued with their own version of Integrated Studies in 1970/71.
- 7 schools that worked within the Project in 1969/70 but dropped out at the end of the year 1970 or failed to complete their trial work in 1970/71.
- 5 schools that joined the Project for work in 1970/71.

These four groups will be referred to as Successes, Independent Successes, Failures and 2nd Year Trial Schools respectively. These are operational definitions only. They should not be read as evaluations of the work of the schools in the Project. Details of the sources of evidence can be found in the Annex.

The analysis that follows concentrates on two stages in innovation, the introduction of the new curriculum and methods and its establishment in the schools. The third stage - when the innovation itself becomes a tradition in some schools is still under investigation.

II

THE INTRODUCTION OF NEW CURRICULUM

In 1968, when the Project was mobilising schools for trials of integrated studies, there was accumulating pressure for change. Seventeen of the 33 schools which joined the Project had already experimented with some form of integrated humanities. The positive attitude of the five local authorities concerned can be judged from their willingness to pay the salaries of the coordinators.

The Keele team approached schools with the offer of material support, guidance over the establishment of teaching teams, advice over the methods of integrating subjects in the humanities and facilities for teachers to develop their own curriculum. The object was to use the trial school teachers, not as passive receivers of materials for trial but as active partners in the development.

The teachers who became involved were committed both to subject integration and to cooperation between the teachers involved. But they were also committed to feed information on their experience back to the Project, to help in the evaluation of new materials and teaching methods and to participate in the development of integrated studies through cooperation with the Project team and other trial school teachers.

The guidelines within which teachers were expected to work were drawn to allow a wide latitude. It was expected that the teaching team in every school would choose themes from the six curriculum units that suited their subject interests. The children were to learn by enquiry, probably in small groups, but through a variety of contacts with other children, a number of teachers with different interests and the people in the locality of the school. The integration of subjects was to be managed through regular planning meetings of the teachers involved. Such planning was also stressed as essential to ensure that the children's enquiries would be profitable and that the work would be concentrated on important issues and subject to continual assessment.

A. MOTIVES FOR JOINING

The motives of the teachers who joined varied widely. They were :

- Those who joined the trial to continue and deepen existing integrated studies.
- Those who were dissatisfied with separate subject teaching of the humanities, usually in junior forms or for early school-leavers.
- Those who were attracted by the package deal offered.
- Those who were persuaded to join by Head teachers.

Because of the variety of individual motives that lie within each of these categories, none necessarily led to success or failure. However, in four of the seven Failure schools, teachers had been pressed into joining the team teaching programme by their Head teachers. The generalisation that innovations will fail if teachers are conscripted into them against their wishes or even when they do not positively support them, is supported by the other four sources of evaluation listed in the Annex. It is also supported by the evaluations of such innovations as de-streaming and of the Initial Teaching Alphabet. If the teachers do not support the introduction of new curriculum they will, deliberately or not, ensure that it will not be a success.

This can be illustrated by the following experience. One school, which had already had some experience of integrated work, joined the Project as a result of enthusiasm on behalf of the Head teacher, who brought together not only the teachers already engaged in Humanities teaching but others whom he felt should be involved. He also insisted that he would play a part in the team. Eight teachers were drafted into the team. By the end of the first year of trial, three major weaknesses had emerged which were to lead to the Project being dropped from the school. First, the Head teacher, although insisting on full membership of the team could not find the time to play such a part. Second, the team soon existed in name only, never meeting to plan and reverting to traditional classroom teaching even though using the material provided by the Project. Third, the pressed teachers attacked the continuance of the Project as a cause of declining standards of attainment in the contributing subject areas. The attitudes of teachers that lie under these changes were not visible while the innovation was being introduced into schools. But they became crucial in determining

whether the new methods were established and the form of that establishment.

This case history points to a crucial part of the strategy of innovation. The introduction of new curricula is easy compared with the problems of sustaining the innovation in the schools. In a period when there was both national and local pressure for change, few schools could resist the offer of support. The package was not only attractive in itself, it also carried the prestige of the Schools Council and the University. But this attraction was greater for Head teachers than classroom teachers. Once the strain of being involved in innovation built up after introduction a re-assessment was inevitable.

B. THE DEFINITION OF THE NEW ROLE

The three related elements in the role expected of teachers who were involved in the innovation, subject integration, use of enquiry methods and membership of a team were spelled out in a number of documents for schools as well as being explained by co-ordinators and at conferences. While each school accepted the broad outline of this new role, there was no precise, previously established blueprint to be followed. The objective of the Project was to encourage a variety of developments within schools within the outline what could be used as a basis of later developments in the field of integrated studies.

The organisation of the Project seemed ideal for ensuring that communications would flow freely between schools, the Project team at Keele and the local advisory staff of the education authorities. While a variety of interpretations of the new role were anticipated and encouraged, the Project was organised to guarantee that the underlying objectives and definitions of the role of the teachers were shared by the parties involved.

In practice, this broad unanimity probably never existed. The explanation seems to lie in the different perspectives of the Project Team, the schools and the local education authorities. However close the contact between them, they were each primarily concerned with a different set of problems. During the introduction of the innovation into schools, each party probably saw it as a means of achieving a different set of objectives.

The objectives of the Project team centred on the need to obtain the cooperation of teachers to test a new approach to both content and methods. The ideal was a teacher willing to maintain

his subject discipline within a team and to engage in planning integrated work through discussion with other specialists. This teacher was to be an active producer as well as consumer of new materials and ideals for integrated subject work. He was to keep accounts of his innovatory work and feed this experience back to Keele. He was to organise the work within integrated studies so that children would not only come to discern the concepts that order knowledge in a number of usually distinct subjects, but would learn the skill of finding out through their own enquiries.

The local advisory staff of the education authorities accepted the objectives of the Project as legitimate, but in practice were more concerned with the relevance of the innovation to the problems faced by subject teachers in the humanities and with the maintenance and raising of standards of attainment in the schools. Furthermore, the local advisory staff were concerned to protect innovations that they had sponsored where they saw integrated studies as a threat. Where the Project team saw a situation that could provide a trial for an innovation that could be diffused elsewhere, the local advisors saw the innovation as a possible means to improve local schooling.

Between these two influences the teachers were mainly concerned with the immediate problems of the classroom. To them the Project offered materials that would help introduce new courses that seemed to be educationally desirable and liable to motivate children more than traditional subject-teaching. They were less concerned with underlying philosophies of integration than the Project and less concerned with adopting new forms of team teaching. They were concerned with the concrete problems of motivation, discipline and the maintenance and assessment of standards of work.

The innovating teachers did not only adopt a version of the new role that differed in emphasis from that used by the Project and the local advisory staff. They were also subject to many differing influences on this role from inside the school. The interviews showed many diverse attitudes among the teachers in the same school. Teams were liable to contain teachers with conflicting views of the innovation role. In addition, where Head teachers had been enthusiastic supporters of the introduction of the Project, as in four of the seven Failures, the teachers were often involved in innovating as a result of the Head teacher's enthusiasm rather than their own. Inevitably, therefore, strains were likely to appear after the introduction that could either lead to the failure of the innovation and its drop-out from the school, or to

distortion of the original innovation into forms more agreeable to the teachers involved, but distinct from the intentions of the Project.

This tendency for the innovating role to change once the integrated studies Project was working in the schools, is only one example of a factor in curriculum innovation that is usually ignored. It is not just that the various parties involved adopt their own version of the innovation and work it towards their own ends. Each of these parties will be changing its position. In the Keele Integrated Studies Project between 1968 and 1971, there were changes in the objectives and methods of working that were partly the result of feed-back from teachers, but also partly the difficulties in mobilizing teachers into the process of curriculum development. There were also simultaneous changes in the organisation of secondary education in all the local education authority areas in this period that further influenced both the role envisaged by local advisory staff and that of the teachers in the schools concerned. Finally, the Project in the schools changed as teachers evaluated the new content and methods and introduced modifications of their own.

There is therefore no unchanging innovatory role during curriculum development. The establishment of innovation is itself a source for continuous re-definition of roles. This applies particularly to projects such as that organised at Keele where the intention was to use teachers as active participants in developing the innovation. This hope was frustrated by the difficulties experienced by the teachers in just introducing new work. Few of them had time or energy left to feed it back and engage in planning with the Project team. This re-definition and the accumulation of factors leading to it support the view that the crucial stage in developing new curricula and new teaching roles is not the introduction of the new schemes into schools, but their establishment and consolidation in the period that follows.

III

THE ESTABLISHMENT OF THE INNOVATION

It has already been stressed that the interviews with teachers produced a variety of motives for joining, and many different styles of teaching integrated studies courses. From these interviews, and from analyses of the organisation within the schools involved, a picture can however be built up of the context within which these innovating teachers worked. Here the factors influencing the role will be described. A statistical picture of the effect of these factors on success or failure to innovate will be presented in the next section.

A. PRESSURES ON THE INNOVATIVE TEACHERS AS INDIVIDUALS

The most frequently mentioned and most pressing factor increasing the stress on the teachers was the time and energy involved. The source of this expenditure was partly the nature of integrated work, partly the need for team planning and partly the demands made on teachers by active enquiry methods. But the drain on the teachers also came from the involvement in innovation itself. The following were quoted by teachers as sources of demands on their time and energy :

1. Preparing new materials for the new courses.
2. Re-writing Keele pack material for use with particular groups of children.
3. Duplicating materials for use by individual children.

These were the consequences of a Project that invited the participating teachers to develop their own approaches and materials. But some of the re-writing was caused by the level at which the given material was written. Aiming to cover children over a wide range of ability, it proved to be too difficult for groups of

children at the lower end of the ability range. The Project team had also assumed that integrated studies would be in unstreamed groups, but schools went beyond this to include remedial groups. This further increased the need to adapt material. A local study was also included in the work and this too involved much preparation from the locality of individual schools. In all this work the teachers received little secretarial help. They paid tribute to school secretaries who fitted in help between routine jobs and to County librarians who helped find sources for materials but most of the work had to be done by them on unsophisticated and time-consuming machines.

4. Arranging for multi-media use.
5. Arranging timetables.
6. Arranging rooms for enquiry methods.
7. Team meetings.

The teachers were faced with the organisation of enquiry-based, integrated studies using team-teaching in schools that continued with traditional methods for the major part of the time. It was not just difficult to find the right-sized spaces for teaching whole year-groups instead of individual classes. Individual and small group work demanded a series of different-sized spaces in schools which had been designed for one teacher with one class in one room.

However, even if spaces could be found, they still had to be booked in the face of opposition from other classes. But this time-tabling was complicated by the needs of team-teaching. Every effort was made by the Project team to get an assurance that blocks of time would be made available in place of the conventional 45-minute period. In only 3 of the 38 schools, the timetable was not blocked and 2 of these left the trial at the end of the first year. In 22 of the 38 schools, the timetable was blocked specially for the Keele Project.

Having obtained rooms and sufficient time, the innovators then had to obtain the necessary hardware to show slides, strips and films in rooms that could be blacked out. In many cases the school hall had to be used in competition, not only with music, games and drama, but in the face of preparations for school dinners.

In 11 of the 38 schools, team meetings were scheduled within time-tabled hours. In another 23 schools, meetings were held in coffee or lunch breaks or after school. It is difficult to over-estimate the importance of these team meetings. The discussion of

content and organisation by different subject specialists was possibly the most stimulating part of the innovation to the visitor. But, in the majority of schools, it meant sacrificing free time. This was not necessarily a lack of effort to provide planning time within school hours. In small schools it was impossible to release a team of six or more teachers at the same time for a planning meeting.

The consequence was that this group of teachers were having to stay after school beyond the time when their colleagues had departed and were having to return to school in vacation time to prepare work in integrated studies. This extra effort was itself a sign of the difficulties in organising teachers into active participation in innovation. It proved difficult to change the organisation of the schools to support teachers who were establishing integrated studies, even though the work involved in accumulating material for enquiry work, in bridging conventional subject boundaries and in establishing teaching teams was very time-consuming.

8. Feed-back requirements.

9. Meetings and conferences.

10. Visitors.

The Project had insisted on the provision of feed-back as a condition of joining the trial. Forms were prepared to help teachers report on their experience. In practice, schools rarely cooperated. In only 2 of the 38 schools was feed-back judged to have been sent regularly and promptly. In another 11 schools, the total amount received was judged as negligible. Six out of the seven failures were in this category. This failure was significant, given the presence of coordinators in the schools asking for information. There seems to have been a reluctance to give information and a reluctance to ask for advice.

This failure to provide feed-back frustrated the intention to involve the teachers in the development. Yet in interviews teachers were fully aware of the problems involved and, at conferences to publicise the Project, were capable of giving advice to others of the best ways of going about integration. Again it seemed to be the effort required in feed-back that combined with reluctance to publicise problems and stopped this active participation.

This difficulty in getting active as distinct from passive cooperation from teachers could also be detected in the frequent requests from teachers at meetings and in interviews for more

guidance, more instruction on how to work integrated studies and more model courses. Even at diffusion conferences at the end of the trial period, there was an expectation among the teachers attending that a blueprint, a prescription, was needed that could be followed, rather than guidelines within which teachers could develop their own style.

The difficulties over obtaining feed-back were partly caused by the private nature of conventional classroom-teaching that makes teachers reluctant to expose their problems to the public. Yet innovation inevitably increased the visibility of the innovating teachers. The Project directors and coordinators were often in the schools. But inspectors, advisors, Schools Council field officers, parents, visiting speakers and observers and researchers engaged in evaluation were also frequent visitors. Each took up time. This increased the strain on the innovating teachers. But there was a threshold beyond which this public attention could deepen the commitment to innovation. In 9 of the 38 schools, the teachers, and more particularly the head teachers, seemed to have a self-identity as leaders in an important educational development. These schools now welcomed visitors and evaluations. They derived strength from the spotlight on their work.

Attendance at conferences and meetings was another sign that a school was investing in innovation. Meetings at Keele, at local teachers' centres and between trial schools were an essential part of the organisation of the Project. Sixteen of the 22 successes contained teachers who were regular attenders at meetings, while 4 of the 7 failures had teachers who were judged as rarely attending.

Attendance at meetings, visits to other trial schools and exchanges of information between the teachers involved were essential to the objective of the Project to mobilise active teacher participation. The difficulties encountered lay, partly in the absence, in some of the areas, of teachers' centres. But even where facilities existed, attendance at meetings on the Project was poor. Again the time and energy involved for teachers engaged in innovation often seemed too much. The coordinators were also rushed and under pressure. They often had to cover large areas. They were also engaged in writing material and in the organisation at Keele. This pressure on the Project team was progressively increased as the end of the trial period approached in 1971 and all the work had to be completed.

In retrospect more could have been done to improve communication between teachers. The coordinators did circulate information

between schools but were increasingly involved in the central organisation. At meetings there was a casual exchange of information between teachers but the distances between schools, the shortage of money and the difficulties in arranging visits between schools, especially across local authority boundaries made it difficult to carry out the original objective of establishing a local, teacher-directed project.

B. PRESSURES ON THE INNOVATIVE TEACHER

The variety of individual motives to become involved in innovation and to translate that innovation into a personal style are influenced by both the conditions of conventional teaching and by the nature of the innovating role. The teachers involved here were particularly concerned with the following :

- a) The need to learn new knowledge.
- b) The need to become involved in new conceptual frameworks.

Although the material in the Keele Project was designed to arch over such subjects as history, geography, English, religious education and art, it stretched the skills and knowledge of the teachers. First it forced specialists in one subject to learn selected aspects of others. In team-teaching, children operating across conventional subject boundaries expected teachers to do the same. But these teachers also had to introduce new work and this usually meant involving more than one discipline.

The second new area of knowledge was the social sciences. Integrated studies inevitably draws on anthropology and sociology. In the Keele Project, the most popular Unit consisted of comparative studies of Tristan da Cunha, Dayaks in Borneo and Imperial China. None of these was liable to be in the teacher's normal repertoire. The consequent need to learn new facts was a small assignment compared with the difficulty faced by the teachers in using new concepts often derived from the social sciences. This was particularly apparent to a social scientist. Even where used, the concepts related to such institutions as the family were isolated, used out of context. The teachers realised this weakness and some schools were looking to the employment of a social scientist to become a team member to help.

- c) Separation from subject-teaching.
- d) Separation from class-teaching.

The feeling of deprivation in team-teaching recurred in interviews. Most teachers were simultaneously engaged in subject and team-teaching, but still the feeling that something was missing in the latter was expressed. This was particularly strong where the teachers felt morally obliged to transmit values through teaching. Religious education teachers were frequently in teams because they saw integrated studies as a way to introduce their subject within a context that gave it a broad, comparative context. But they felt uncomfortable in relation to other teachers with conflicting views and in the team-teaching situation such conflicts would appear in the work for the children. Similarly, teachers of English expressed their disquiet at the weakness of formal written work in integrated studies. All had felt an urge to get back to the comparative peace of classroom-teaching.

It would be wrong to over-emphasise this feeling of deprivation from the security of subjects. What was apparent was the willingness of teachers to experiment, to extend their horizons, to consider alternative approaches. Moreover, the flexible nature of the Project made it easy for teachers to opt out of the team if they wished, and return to formal classroom-teaching.

Another feeling of deprivation arose from involvement with what was basically a larger group of children. While individual and small group work occurred, individual teachers were still concerned with a whole year group of around 150 children in a variety of rooms rather than a class of 30 confined with them in the same classroom. The teachers felt that they did not get to know the children so well. They stressed that there were advantages for the children in the mixing that occurred, but for them it had not the same quality of contact.

This feeling was related to the strain of innovation. Team-teaching and enquiry methods involved teachers in work with individuals or small groups. Information had to be given tailor-made, not in a standard packet to a whole school class. The teachers expressed this as giving information a hundred times to individuals rather than to classes of 30 at a time. These were secondary school teachers, trained to conventional techniques. The adjustment to new methods was difficult.

e) Anxiety about standards.

f) Difficulties in evaluating integrated work. 2

Most teachers were concerned in case there had been a drop in standards. They were still subject specialists who feared that

the children would not learn the essential skills of the subject disciplines. There seemed to be agreement that there had been a drop in standards at the start of the trial period. These were later seen as being compensated by the increased activity of the children and the gains from being able to involve a variety of subjects in the study of the same topic.

The concern over the apparent temporary drop in standards was increased by difficulties over the way integrated studies could be assessed. Banks of questions were prepared to help teachers and coordinators circulated new techniques. However, the traditional use of tests, essays and examinations was inappropriate now that the product of the integrated work might be a skill in finding out, an exhibition arranged by a group of children or a tape recording. Work could no longer be assessed as the learning of facts by individuals.

This worry over standards and assessment also centred on external examinations. By 1971, arrangements for a CSE examination were established. Integrated studies was to count as two subjects, thus removing the fear that the integration of subjects would mean a loss of subjects taken. However, the fear about possible falls in standards in subject disciplines remained. Thus English teachers were concerned about basic literary skills, geographers worried that basic techniques would be overlooked and so on. This probably accounted for the apparent anomaly that only 9 of the 37 secondary schools had included 3rd forms in integrated studies. This was the year when the basic skills in subjects had to be learned in order to ensure readiness for work in the senior forms.

In conclusion, this investigation illuminated the context within which innovation has to occur. Schools are architecturally designed for classroom-teaching. They are equipped to support the teacher in his own classroom. Resources are provided for one teacher to transmit information to 30 or more children without active searching by them. Above all teachers are trained to work with classes within conventional subject boundaries. They assess work produced by individuals that is largely the reproduction of facts not the understanding of concepts or the acquisition of skills of enquiry. The teachers are used to privacy in planning their work and autonomy in their classrooms. They are insulated from outside observers.

The Integrated Studies Project was a threat to all these conventions. Wisely there was no blueprint laid down which schools had to follow. Instead each school could adapt the organisation.

suggested to its own plan, tailored to its own conditions. But the results were still the generation of stress. In some cases this was productive. Security and insulation can be conditions of stagnation. The widespread acceptance of the Project was an indication that teachers realised the dangers of this in a time of rapid social change. The stress however and the memory of lost security are hidden below the surface of innovation. They are liable to surface once the initial enthusiasm wanes and once the support of the Project organisation stops. This stage is still under investigation. The next step here is to try to establish differences between Successes and Failures so far.

C. INVESTMENT IN INNOVATION

The difference between success and failure in sustaining an innovating teaching role seemed to be related to the investment made by those concerned. Information was collected on each school on the following indices of investment :

- Whether team meeting time was arranged within school hours, left to teachers' spare time or whether meetings were not organised.
- Whether time-tables were specially blocked for the Project, were normally blocked or left as single periods.
- Whether feed-back was regular, irregular or negligible.
- Whether a special head of department had been appointed, whether responsibility had been allocated but without a corresponding allowance or whether no special arrangement had been made.
- Whether supplementary material had been accumulated systematically, incidentally or had been neglected.
- Whether attendance at conferences and meetings on the Project had been regular, occasional or rare.

Each of these investments had been judged by the Project team as important factors in ensuring the success of the innovation. Again however each school offered a unique experience and any average picture inevitably conceals these anomalies. Thus the appointment of a head of Humanities in one school led to a rejection of the Project. In another, it led to discontent within the school that damaged the Project. Some schools seemed to benefit from leaderless groups, others from leadership that was circulated while others seemed to need an appointed head of department.

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The total scores on the combined index from these six investments were as follows. The highest possible investment would have scored 18, the lowest 6.

Successes (two years of trial)	14.0
Failures (dropped after or in 1st year)	6.9
Independent Successes (one trial year, then independent work in integrated studies)	14.0
2nd year trial schools	15.4

This table is built on the judgements of coordinators, the Observers panel and reports from the schools. It indicates the importance of the initial investment in innovation in sustaining the new role. It is merely saying that the chance of success was determined by the outlay of time, effort and resources. This is obvious, but the need to invest, plan and manage by the schools before the introduction of new curriculum is often neglected. However great the investment by the sponsoring agency, the long term success of innovation may depend on the extent of initial commitment by the schools.

This was confirmed by the investment in the 9 schools that had come to see themselves as innovatory and were receiving public recognition as a result. Here the investment index was 14.7. All these schools were Successes or Independent Successes. Their investment was paying in a way that made innovation personally satisfying to the teachers involved.

Another index of investment was the employment of high-level manpower in the project. This was no guarantee of success, but did ensure prestige and increased the chance that knowledge of the innovation would spread among staff not involved. Taking the size of schools into account, there was an average of 3.8 Head teachers, deputy heads and heads of departments involved in Successes compared with 2.3 in Failures. The mixing of senior staff in a team had one important consequence. New, inexperienced teachers and student teachers on practice in the schools sat in planning meetings hearing senior, experienced staff discuss future work, defend their contribution and suggest ideas for others.

Whether involved or not, the support of the Head teacher was obviously essential. In 28 of the 38 schools this support was judged to be very positive. In 4 of the 22 Successes and 3 of the Failures the Head was judged as neutral in attitude. However when the size of school was taken into account this difference disappeared. The neutral heads tended to be in larger schools with a

five form entry or more. There was no apparent difference in size between Successes and Failures.

A measure was made of the material conditions available within trial schools to see if this influenced the success or failure of the work. This took into account the rooms that were available and the financial support that was offered. Out of a maximum possible score of 6, Successes scored 3.2, Failures 3.7, Independent Successes 3.75 and 2nd Year Trial Schools 4.0. There seemed therefore to be no relation between success in innovation and the material facilities available. Teachers complained about shortages of convenient rooms, material and financial support, but the impact on innovation did not seem significant.

It is dangerous to generalise from these crude indices. But it seems that material conditions were less important than the climate for innovation in the school. This was investigated through judgements of the attitudes of staff not involved towards the Project. In Successes, the average score (Maximum possible = 3.0) was 2.2, in Failures 1.4, in Independent Successes 2.0 and in 2nd Year Trial Schools 2.2. This was some indication that the social context within which innovation was introduced was more influential than the physical conditions. In only 1 of the 22 Successes were other staff judged not to be supportive, but this occurred in 4 of the 7 Failures.

This failure of innovation to survive in schools where other staff are not supportive confirms the author's earlier research into the relation between curriculum innovation and the organisation of schools (1). Because of the competition for resources, for time and for room, projects cannot be isolated. Even more important, the innovating teachers are vulnerable to criticisms of fellow, non-involved staff, particularly where the criteria for successful teaching are defined for traditional teaching in closed classrooms. Enquiry methods often seem disturbing to traditional teachers who judge success on the silence and stillness of classes and the amount of factual information absorbed.

The conclusion is obvious. Innovation needs support from all staff and often from parents as well. This needs a public relations exercise and carefully managed introduction and consultation. Yet this is rarely organised and curriculum projects are viewed as self-contained rather than as one part of an indivisible set of working arrangements.

1) Shipman, M.D. : "Innovation in Schools" in Walton, J. (ed.), Curriculum Organization and Design, Ward Lock, 1971.

IV

THE INSTITUTIONALISATION OF THE INNOVATING ROLE

There are three phases in any successful innovation, introduction, establishment and institutionalisation. The investigation of this third phase will be carried out in 1971/72. Here only predictions can be made on the evidence collected to date.

There were three major changes in the roles of the teachers studied here involving subject area, the organisation of teaching and of the learning situation. There was no blueprint laid down in advance in any of these activities. The changes that occurred and were established could be different in each and be combined differently. Even in the team-teaching situation, individual teaching styles could be maintained. Teachers started from different styles, adopted suggestions from the Project in different ways and adapted them to suit their own different interpretation of good teaching.

A project designed to change the teaching role can therefore have a variety of largely unpredictable results. The changes that are institutionalised are neither homogeneous nor necessarily intended in the planning of the innovation. The Failures in this Project had mainly reverted to the traditional role from which they started. But among the Successes, counted only because they carried on through a second year of trial, there were a variety of versions of integrated studies. Some integrated subjects but never formed teams in anything more than name. Some merely taught separate subjects under a common label of Humanities yet the teachers involved were cooperating in planning. Others moved over to enquiry methods but without team planning and with subjects still unintegrated.

In other cases, the main gain from involvement in the Project came from some minor if important aspect of the work. A teacher here became interested in resource storage and retrieval. Another there became interested in the theory of integration between

subjects. For the first time teachers had to discuss and justify their contribution to others from different subject areas and with different views on teaching method. Others became aware that their work was of interest to others and that public recognition compensated for the extra work.

These incidental but important gains were often the result of the essentially local nature of this Project in its trial period. The 38 schools were located around and near Keele. They were linked to the planning team by coordinators. The Advisory Committee had a majority of teacher members. All the local authorities involved were represented. The Observers panel for evaluation (see Annex) consisted of local advisors and College of Education lecturers. While it did prove impossible fully to mobilise teachers into participation in project development, some progress was made. The teachers had the opportunity to discuss their work with interested academics and among themselves. Support for the innovation was organised from the start and if not fully successful was important in stimulating change.

A national project based at a distance from cooperating schools is less likely to generate this serendipitous change. The support that can be offered is often a new syllabus, a new external examination and a set of text books and guides. Even where there is backing from in-service courses and initial training of teachers the impact is likely to be small.

The contrast is the small local project developed in a single or a few schools which is backed by resources. The impact here may be great, but in a limited area. The Keele Project was a promising compromise, large enough to employ specialists and centralised resources yet small enough to have an intimate knowledge of the operation of the project in each trial school. It could produce published materials sampled in enough schools to ensure their value, yet was able to use local ideas to shape the published product.

Nevertheless, the resistance to change was great. This was manifest in both drop-outs and apparent successes. With the flexible approach of this Project and its diverse objectives, the disappointment was not rejection of the innovation but its transmutation. It was expected that many schools would not be able to sustain the changes introduced. Some schools were accepted for trial because they were of a particular type rather than because they seemed suitable or committed themselves fully. This is why caution has been recommended in interpreting the results presented

here. More disturbing was the way schools continuing with integrated studies had distorted the philosophy and recommended operation of the innovation. Such adaptations were encouraged, but some of the versions of team teaching, integrated work and learning by enquiry were far removed from those envisaged by the project team at the start.

V

CONCLUSIONS

The conclusions that follow should be treated with caution for two reasons. First, the evidence on which this paper has been based is provisional only. Second, it would be dangerous to generalise from the experience here to other innovations. Both the flexible nature of the innovation proposed and the style of organisation of the Project were unusual and may have produced unique responses. However, three conclusions can be drawn :

First, the pressures on teachers involved in innovation to revert back to traditional content and methods are strong. These are only partly due to the nature of the innovation. They are also the product of the way the teaching role is traditionally defined. The innovating role seemed insecure. The assessment of standards of work was difficult. The new content was strange. Enquiry methods often seemed too time-consuming.

The traditional role was not only known best, it incorporated established views on the true nature of teaching. It gave the impression of successfully transmitting knowledge in an easily tested way. It placed the teacher in close contact with a group of children at regular intervals in a closed classroom. The teachers knew that there was a clear career structure for this established subject teaching. It was consolidated by external examinations, expected by parents and prepared for in training. It was the role in which the secondary school teachers had a considerable investment, built up during training and while teaching. The innovative role was less clearly defined, lacked external supports and offered only an uncertain future for those involved. There was therefore no obvious profit in innovation for the individual teacher.

The second conclusion was that involvement in innovation was both wearing and stretching. The crucial stage was not the introduction of the project but its establishment once these strains began to tell. This strain was increased by the exposure of the

innovating teachers to outside observation. Innovations have to be evaluated. The teachers have to report back, be observed and accept visitors. As more time and energy is expended there is more exposure to critical evaluation. The pull of the traditional is combined with the strain of the new.

The third conclusion follows from this combination of strain and exposure. Successful establishment seemed to depend on the teachers investing enough in the innovation to overcome that already built into the traditional role. This was itself dependent on the resources made available by the school, the local authorities not only made money available to trial schools, but were paying the salaries of the four coordinators. They had a vested interest in helping the project to work.

The importance of support for the innovating teachers can be seen in the importance of involvement by senior members of staff and of positive attitudes by teachers not directly involved. This was a management problem for the head teachers. Similarly external support from the Project team, from local authority advisors, from Colleges of Education and from parents was also essential and necessitated a major exercise in public relations for the Project team. The crises in the history of the trial period often revolved around apparent competition from other Schools Council projects, from other locally sponsored innovations and from misunderstandings between the various parties who advised the schools.

This Project was organised from the start to mobilise support for the trial schools. Almost a year was spent organising an Advisory Committee that would represent all the potentially interested parties. Teachers were given a majority to ensure that they would see it as a grass-roots exercise not one imposed by the Schools Council through the university. In practice this effort was powerless to stop centralisation so that the teachers and advisors came to see the Project as centrally directed despite all the efforts of those involved to retain local initiative.

This centralisation occurred through the difficulties in mobilising teachers into a horizontal communication network that was seen in the early stages of the innovation as a way of accumulating information that could guide the Project team in preparing materials and devising appropriate teaching methods. Thus the coordinators were sometimes seen, not as links feeding information both ways between project and schools but as providers of materials, salesmen or assessors. Yet they were often crucial in this innovation and their role as change agents gave this project a unique

structure that might be a model for future innovation. Their knowledge of the individual teachers involved and of the organisation of the trial schools enabled them to give the needed support. They spread ideas from school to school. They quickly reported the criticisms of the teachers on the over-complicated language of early documents and the unsuitability of early materials. But they also played a full part in writing materials from their own experience. Above all, they were known in the schools as experienced teachers with a knowledge of local problems.

This innovation, taking place in the decentralised English education system, was open to different interpretations in the schools involved. Each started from a different curriculum and was invited to develop its own style of innovation within the broad framework of integrated studies. It would be misleading to generalize from such a sample. The one universal finding was that the spread of the innovation was checked by the insulation within and between schools. Teachers were used to a cellular structure and felt uncertain once team-teaching and integrated studies were introduced. While teachers' centres might develop as a link it was difficult to organise horizontal communication between innovating teachers. Local authority boundaries and even divisional boundaries within them provided a further layer of insulation.

The object of innovation is always to shift teachers to a new position, to consolidate this situation and finally to institutionalise it as a new tradition. The initial shift is relatively easy, but once the strains of the new position become apparent, the attractions of the security of the traditional role are often too strong. In the Keele Integrated Studies Project there seemed to be a threshold beyond which teachers would accept the innovative role as rewarding. Attaining this threshold involved an investment of resources in new organisation by the schools and a personal investment by the teachers. In a few cases this had produced a pride in being in the vanguard of innovation. In the majority of cases, investment had been sufficient to persist with the innovation while the external support of the Project team was in existence. In the remaining cases the investment had been so slight that there was a rapid regression to the old role.

Annex

METHOD OF INVESTIGATION

This paper on the teaching role in conditions of innovation is based on evidence collected for a wider study of the relation between the organisation of a curriculum project and the organisation of schooling. The focus of this investigation is on the factors resulting in decisions within the project and others in the schools and the local education environment that determine the implementation of project decisions.

This objective determined the methods employed. First it necessitated an intimate knowledge of the working of the Project as it developed. This had to include the relations with the Schools Council, the University of Keele and the publishers of materials. It had also to include investigations within the trial schools and of the influences on those schools from the local authorities and any other relevant local and national agency. The investigation was designed to last through the life of the Project and for one year beyond, so that the effect of withdrawal of support from the schools could be determined. Since 1970 this work has been supported by the Nuffield Foundation.

The basic source of evidence has been observation. With few exceptions every project team meeting, every advisory committee meeting and every meeting of the Observers panel has been attended and notes kept. The Observers panel, consisting of College of Education lecturers and local education advisors, was set up to provide an independent evaluation of the project and the report of this panel has been used to check the evidence collected by the author. In addition, there have been two independent investigations of project schools, both coordinated with the work reported here and under the general supervision of the author.

The observations have also been made within trial schools and have been supplemented by a programme of interviews. These are still being completed. The final sample will include not only teachers involved in the trial, but head teachers, local education

authority advisors, relevant Schools Council personnel and members of the advisory committee. This paper is based on interviews with teachers in six of the schools and with local advisers.

The statistical information on the school organisation and the way the innovation has been handled is based on information collected by visits to trial schools, from feed-back from these schools, from information collected by the project team and from questionnaires filled in by the coordinators.

The variety of methods used were necessary to accumulate the data needed. Continuous observation and collection of information was the only way of obtaining a full picture of the working of the Project and its operation in the schools. These methods could also be cross checked. This was particularly valuable in the case of the independent Observers Panel report. But this independent checking was also supplied by the reports of the Project team itself. Across the three years of the Project, a mass of information has been collected to help in evaluation. Much of this is directly comparable with that collected specifically for the independent investigation reported here.

There are obvious dangers in the involvement that has resulted from over two years of observing, visiting, interviewing, attending conferences and meetings. The author has also been drawn into the Project to speak to teachers, help in evaluation, to give advice to schools and act as consultant. But the gain in inside knowledge has justified the time involved and the existence of independently collected data is some check on a possible weakening of objectivity.

IV

EFFECT ON TEACHER ROLE OF THE INTRODUCTION
OF EDUCATIONAL TECHNOLOGY AND MEDIA
INTO AMERICAN SCHOOLS

by

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SUMMARY OF KEY ISSUES

After three centuries of education in the United States, the teacher's role has been little affected by the introduction of media, and it has been even less affected by the much more recent concept of a technology of instruction. Although equipment and materials are relatively plentiful, audiovisual materials remain as an "aid" to the majority of teachers, chiefly used for presentational purposes.

In this paper, the term "media" is used to refer to those materials and devices used in the processes of teaching and/or learning. The term "instructional technology" is defined as a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication, and employing a combination of human and non-human resources to bring about more effective instruction.

After 1960, education in the United States saw the beginnings of instructional technology. The education community has begun to realize that instructional technology is different from audiovisual education, that the use of media should be an integral part of the instructional system and that instructional technology will change the role of the teacher. This period has seen the tooling up of the schools with hardware and software and fairly massive efforts to retrain teachers. The functions of media have also been broadened from the emphasis on the presentation function to newer uses such as self-analysis, interaction and self-instruction.

At this time in the United States, most schools are operating at what this paper calls "Level One", that is, the "aid" or "product" definition of educational technology. However, there is now a clear trend among a few "leader schools" towards the much more sophisticated application of technology that is characterized by the "process" approach, or, what in this paper we have described as "Level Two". The role of the teacher is different under each of these technological patterns. Under Level One, the teacher is

teamed with media, in Level Two, media may substitute for certain functions of a teacher, thus causing critical changes in the functions of the teacher. The direction tends to be away from the lecture-tell method and in the direction of discovery methodology, and more individualised instruction. This means that the teacher will spend less time on information transmission as compared with the more "human" roles such as modelling, guidance, inter-personal relations and classroom management.

Within the next ten to fifteen years, major changes will have to be made in the training and retraining of teachers. More emphasis will need to be given to individualising instruction, operating as a member of a team, assessing pupil achievement and diagnosing learning difficulties, providing a working knowledge of technology and of man-machine relationships, and the selecting, modifying and/or producing of instructional materials and instructional systems. The paper suggests several of the problems that lie ahead in this re-education process and suggests some steps to facilitate the role change of the teacher.

"No occupation - perhaps not even teaching - is immune from technological change."

Robert M. Hutchins

I

INTRODUCTION

After three centuries of education in the United States, the teacher's role has been little affected by the introduction of media, and it has been even less affected by the much more recent and much more elegant concept of educational technology.

The OECD Secretariat's invitation for this paper included the following assumption :

"...This is a subject on which there should be enough experience in the United States for an objective assessment of the problems which arise, treated in the broader context of the relative effectiveness in comparison with the more traditional approaches, and also of the impact which they had on teacher roles and reactions. We would hope that such a paper would endeavour to present United States experience in this field in a way that would contribute to a clarification of a controversy that has arisen around this matter..."

In retrospect, my initial response to the invitation represented a more positive and a more optimistic stance than I have been able to sustain in this paper. Certainly, as it seemed at the outset, there is enough evidence to permit a fairly objective assessment of the problem and to generate some recommendations concerning the effects on the role of the teacher as a result of new educational technology and media in primary and secondary schools. Now, having completed this assignment to the best of my ability, I am much less convinced that the assumption on which the

invitation was based can be supported. Perhaps others can learn, however, from what we, in the United States, have tried with limited success.

The fact is that there has been enough experience for an assessment, but the necessary data were never collected or at least not collected and documented in a way that can be useful in answering the questions posed. To a degree, this paper represents a limited attempt to do this. But we are plagued by the fact that dramatic innovations, when widely publicised, are followed by the need to claim success by those trying out the innovations. Thus, problems are minimized and gains inflated. This phenomenon may not be limited to the United States, but it is certainly compounded by the decentralised nature of our educational efforts.

The Secretariat wisely distinguished between educational technology and media - wisely because the role of the teacher varies greatly in a "media-oriented" school and in a "technologically-oriented" school. Educational media are universally used in education today whereas educational technology tends to be accepted in name but hardly at all in application. Certainly, bits and pieces of what one day may be a technology of instruction can be found in the schools today, but no single school in the United States has more than a few of the elements which must be assembled into a technological system. It may be appropriate at this point to distinguish between the two terms.

Instructional media are those materials and devices utilised in the teaching and/or learning process. The Commission on Instructional Technology, appointed by the Secretary of Health, Education and Welfare of the United States Government in 1968, defined instructional technology as "a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication, and employing a combination of human and non-human resources to bring about more effective instruction".

Hoban, in 1962, was one of the first clearly to differentiate between media and technology.

"The point here is that the term 'educational media' does not, in itself, suggest the ramifications for research and for educational policy and operating procedures which are inherent in the term, technology of education. Technology is not just machines and men. It is a complex, integrated organisation of men and machines, of ideas, of procedures, and of management. The introduction of this complex organisation generates

many systematic problems that can be and have been ignored or generally neglected in theory research, and practice in education. The term educational media, limits ; and the term educational technology, expands the areas of theoretical development, research, and implementation in education." (21, p. 124)*

It can be seen that the concept of educational media is quite different from the much broader concept of a technology of education. It can also be seen that the two concepts will have quite different effects on the role of the teacher.

A. BACKGROUND ON EDUCATION IN THE UNITED STATES

The first fifty years after the attainment of independence was a period when many ideas were argued and fought over as the new nation attempted to develop the framework for its institutions. Education was no exception. Out of this period grew the following premises upon which education in the United States is based :

- If a republican government is to prosper, the people must be educated.
- This can best be done if all children attend the same public schools together and are separated only for religious education.
- The language of the school should be English.
- Free schools should be provided serving both the children of the rich and the poor.
- Everyone must participate in paying for this government-sponsored education.
- The legal responsibility for the schools rests with the states rather than the national government.
- Local school boards should be created which represent the people.

Whereas the goal of the first century in the United States was to provide some education for all and much education for a few, the goal in the past century has been to provide as much education as possible for everyone. By 1960, over 99 per cent of children aged 6-13 and nearly 90 per cent of those aged 14-17 were attending school. Although the thrust for an increase in the quantity in education seems to be continuing into the last half of the 20th

* Numbers in brackets refer to the Bibliography (pp. 265-269).

Century, it is over-shadowed by an emphasis on increased quality in education.

This has led to experimentation and innovation in teacher education and in the curriculum and methodology of the elementary and secondary schools, and the beginnings of experimentation with instructional technology in its true sense. This progress has been stimulated by money provided by the federal government for purchase of instructional materials and equipment, research in education, introduction of innovative practices and experimentation with new patterns of teacher education and re-education. Unfortunately, the efforts of federal government have been spotty, fragmented and of short-term.

B. TEACHING MATERIALS

Textbooks and other teaching materials (actually, they should be considered "media of instruction") for the schools developed as a private enterprise rather than a function of the government. As mass production and other technological developments took hold, a flourishing textbook industry developed in the 1830s and 40s and with it marketing practices that have held to this day. Many criticisms were directed at the industry as witnessed by a writer in 1852 :

"The houses of many of us are overflowing with the results of this misdirected industry and mercantile enterprise, so that not a few of us are obliged to refuse admission to any further specimens of school literature... There can be no justification for the flood of dreary looking productions that are conveyed in the carpet-bags of courteous agents from town to town." (1, p. 32).

By the 1860s, lists were being issued of recommended textbooks for various subjects. This opened the way to state control of textbook adoptions, a practice which we have been unable in the intervening years completely to overcome as 27 of the 50 states still issue lists of approved texts.

Until 1850, the basic audiovisual materials in the public schools were the blackboard, maps and slates. It is interesting that the blackboard did not replace the slate which was an older device. In fact, there appears to be little connection the spread of their use. The slate use continued until 1900 when the advent

of cheap paper, pencils and steel pens caused it to disappear. This condition has tended to persist with the audiovisual inventions that were to follow, and today there is no tendency for one to replace the other. This has continued to complicate the situation both by increasing the cost of equipping a school and by increasing the problem of teacher training for their use.

Things are continually added to the school but little is subtracted. In the early part of the 20th Century, education in the United States was being influenced by leaders who advocated the visual-sensory approach to instruction. This led to the use of more non-projected, pictorial materials, the school excursion or journey, interest in bulletin boards and displays, and in the school museum movement. All of this formed an excellent backdrop for a relatively rapid introduction into the schools of a series of inventions that made possible new visual and auditory methods of instruction. Among these were the slide and the filmstrip, the phonograph, the silent 16mm motion picture and the radio in the 1920s ; the sound 16mm motion picture projector in the 1930s and the magnetic tape recorder in the 1940s and television in the 1950s.

The growth trend, as represented in number of teachers per piece of equipment, levelled off about 1955 for most of the older types of audiovisual devices but growth is still continuing for newer ones such as television receivers, tape recorders, overhead projectors and video-tape equipment and also for the small, relatively inexpensive models of equipment for individuals and small group use. This trend is clearly having its impact on the role of the teacher.

C. TEACHER EDUCATION

Prior to the 1820s, no special education preparation was available to persons entering a teaching career. The feeling was developing, however, that teachers might profit by some training in dealing with small children. The liberal arts colleges showed no interest in the task, so a new institution was created called the normal school. It gave its whole attention to the training of young people of high school age how to teach the elementary school subjects.

As standards became higher in the public schools, more competent teachers were required than were being produced by the normal

schools, and in 1879 the first chair of education was established at a university. This trend spread rapidly. Both methods of teacher preparation persisted into the 20th Century but by the 1920s the normal school, sometimes called the teacher training school, had practically disappeared. The concept of the four-year academic programme resulting in a bachelor's degree at an institution of higher learning was firmly established.

Previous to 1920, teachers were instructed in the use of audiovisual materials and methods through exhortations and instructions provided in meetings when teachers assembled and through articles in professional journals. As the audiovisual tools became more sophisticated, formal courses in audiovisual education were organised and presented. Efforts were mounted by the professional association of educators interested in audiovisual education to have one semester or full-year courses available for teacher trainees. Later, effort was made to get states to require a course in audiovisual education as a prerequisite for certification for teaching. The content of the introductory or basic audiovisual course centred on utilisation, selection, equipment operation and evaluation and, a little later, production with particular emphasis on non-photographic materials. Only two or three states ever made the audiovisual course compulsory for all teachers and this requirement has now been removed.

The failure to require all teacher trainees to take an audiovisual course was not an indication that the number of course offerings was reduced. In fact, the opposite was true. But, regardless of the increase in the number of courses, the reports indicate that only 35.6 per cent of the college and university graduates trained to be teachers have completed even one course on educational media and that only one out of four members of the education faculties are using media to any great extent in their own teaching.

The efforts to upgrade the "audiovisual skills" of teachers took various forms. Textbooks started in 1927 with a book by Johnson entitled Fundamentals and Visual Education. The early texts tended to be simply "cookbooks". Gradually, the philosophical basis for the use of audiovisual materials was introduced, largely based on the importance of concreteness and reality as an aid to increased understanding. The "cone of experience" which was published first in 1946 by Dale became dogma. Great emphasis was given in the early courses to equipment operation justified by the belief that this was not only a useful skill but also tended

to allay the fears of educators of the equipment itself. It has been only in the past decade that the course content has introduced roles of media other than presentation of data and the relationship of the use of media to the role of the teacher.

Another effort to upgrade the teaching of audiovisual education was the development of lists of competencies believed to be essential for the teacher. Among the lists that have been most influential were ones by Herbert Hite in the late 1940s ; by David Pascoe in the 1950s ; the Lake Okoboji Leadership Training Conference list in 1958 and the cognitive, affective and psychomotor competencies developed by Meierhenry in 1966 (30, pp. 225-229) and the University of Wisconsin in 1969 (25, p. 103).

Another attack on the problem of upgrading the audiovisual training of teachers in the pre-service sequence was a study of patterns for conducting the training. Attention centred chiefly on the following patterns : the formal course approach, the laboratory-project approach, integration of methods and audiovisual course content and various combinations of the three. Between 1959 and 1963, Torkelson conducted a study comparing four patterns for preparing pre-service teachers to use media. The patterns investigated were : the separate course, integration with methods, self-study and student teaching while on location in the public schools. The study suggested that :

"The process of self-discovery and personal involvement in determining the merits of audiovisual materials in teaching and learning may develop the attitudes which will result in greater utilization on the teaching job". (43)

Because only about a third of the teachers have any direct training in the use of audiovisual materials today, great attention is focused on in-service or continuing education of teachers ; that is providing this new competency to teachers already in service. This is accomplished in a number of ways. Many teachers go back to college campuses for summer courses ; other formal courses, workshops, institutes and seminars are offered in off-campus situations, some by universities, some by state departments of education and some by school systems and professional associations. Teacher conferences, published materials, school visitations and exhibits continued also to play a role.

There are still too few educators who have any vision as to what education might become through appropriate use of media, or have the desire to change the status quo to determine the most

effective learning systems for their students, or to evaluate their own teaching methods to identify inadequacies in their teaching techniques. Although equipment and materials are relatively plentiful, audiovisual materials remain an "aid" to the teacher, an adjunct to their teaching, chiefly used for presentational purposes to help the teacher clarify, introduce or summarise data.

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II

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BEGINNINGS OF INSTRUCTIONAL TECHNOLOGY

1960 TO PRESENT

A small band of educators chiefly from the audiovisual field and led by James D. Finn, sometimes referred to as the Father of Instructional Technology, seemed to sense that they were living at a turning point in American education. They sensed that the wise application of technology to the problems of education could go far towards reforming and revitalising the educational system. Unlike the majority of their fellow educators, they did not fear "the machine" but saw it as an instrument to achieve human ends. In fact, they went so far as to say that it was beneath the dignity of the human being to perform tasks that a machine could do as well or better; this concept was not new, having been expressed by Thorndike in 1912 - "A human being should not be wasted in doing what forty sheets of paper or two phonographs can do".

A. TECHNOLOGICAL DEVELOPMENT PROJECT

In 1961, the National Education Association undertook a three-year study financed by the United States Office of Education and which was known as the Technological Development Project. The project was directed by Finn who wrote in the Foreword of one of its many publications concerning the purpose of the project:

"The Technological Development Project is attempting to assess the impact of the potential technological revolution of the sixties - a revolution in the way in which young people and adults will learn and be taught - upon the American system of education and the educational profession."

Data collected by the project staff tended to indicate that education had about fulfilled the preconditions necessary for

technological "takeoff". This was ably pointed out in the project's Occasional Paper number 6 :

"It is the mission of the Technological Development Project to attempt an assessment of this technological revolution in education. As indicated above, we view the present educational culture as analogous to an under-developed culture under assault by technology from the co-existing, highly sophisticated cultures of industry, business and even certain sectors of the government, such as the military and scientific sectors.

"If this position is accepted as true (and the arguments for such an acceptance are indeed persuasive), then the emerging patterns of thought regarding economic growth and development of underdeveloped cultures can be used to provide an analog model for the consideration of the technological revolution in education." (15)

B. TASK FORCE ON FUNCTIONS OF MEDIA

In 1962, an audiovisual task force of more visionary educators was assembled by the NEA's Division of Audiovisual Instructional Service to consider the function of media in the public schools. Although the position paper developed by the task force was printed in Audiovisual Instruction, the official magazine of the Department of Audiovisual Instruction, this organisation of professional media specialists, did not see fit to endorse the paper ! (34)

It is difficult today to see why this brief statement was considered somewhat radical in its day but because it was considered a cutting-edged document, it is worthwhile to note some of the philosophy embodied in it.

"A technology of instruction, as any technology, will be a complex activity involving people, materials, machines, systems, and patterns of organisation. Its application will involve, among many other things, the work of specialists stationed at all levels throughout the educational system. Without question, it also means changes in the school curriculum, in the role of the student, the role of the teacher, and in the programs of teacher education." (Emphasis added by author).

Some of the assumptions listed by the task force are also of interest :

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"A new technology for instruction has been developed and proved through basic research and practice. This development has now reached a level that will permit rapid expansion of application and of further innovation.

"Methods of instruction will be modified to a major degree, particularly in the presentation of information.

"Teachers and learners will have new roles and changed activities as a result of this technological change.

"A new kind of professional will be required to provide leadership in design, implementation and evaluation of programs of education which make the fullest use of new media."

In considering the role of media, the task force discussed two media functions and finally introduced the concept of the instructional system. The first function of technological media, the task force said :

"is to supplement the teacher through enhancing his effectiveness in the classroom. Educational media are both tools for teaching and avenues for learning and their function is to serve these two processes by enhancing clarity in communication, diversify in method, and forcefulness in appeal. Except for the teacher, these media will determine more than anything else the quality of our educational effort."

In discussing media function No. 2, the task force said :

"Some teachers have begun to utilize another channel for learning in which the media alone may present and, in a sense, teach certain content to pupils". "Here, the teacher determines objectives, selects methods and content, and evaluates the final learning outcomes. The presentation of information, and even the direction of routine pupil activities, may be turned over to such new media as programmed learning materials, television, or motion pictures..."

"Function No. 2, then, is to enhance overall productivity through instructional media and systems which do not depend upon the teacher for routine execution of many instructional processes or for clerical-mechanical chores. These systems will not be appropriate to every phase or purpose of the curriculum, but they offer the promise of vastly increased productivity in many instructional tasks. Their introduction will necessarily be gradual and must be accompanied by significant increases in the schools' technological capability."

About the instructional system, the task force said :

"The new media have led us to a new approach to instruction. This is a scientifically developed combination of instructors, materials, and technological media for providing optimum learning with a minimum of routine personal involvement by the teacher. The result is a carefully planned 'system' consisting of subject matter, procedures, and media co-ordinated in a program-unit design which is directed toward specific behavioral objectives."

Three things stand out in this document : 1. Instruction technology is different from audiovisual education ; 2. The use of media should be an integral part of an instructional system ; 3. Media and/or instructional technology can and must change the role of a teacher.

The paper, The Function of Media and the Public Schools , pointed out two new media-related roles. The first of these was shared responsibility with media. This may seem like an exceedingly small step to those of us in education today, but it was a traumatic step for teachers at the time. For centuries, they had taught in the privacy of their classroom where they were largely self-sufficient and in control of the dispensing of information. The first response of many teachers was to teach as they had always taught and add the media input above and beyond their own teaching. This often resulted in a type of redundancy. Two examples may be useful. An English teacher stated that he would not use the film, A Tale of Two Cities, until after he had finished teaching and testing on the novel. "Otherwise", he said, "how am I going to tell whether they learned the material from reading the book or from seeing the film". Towards the end of a year when a maths teacher had been associated with an experiment involving programmed instruction, the teacher related how for the first semester he had "retaught" the concept in each module of the programme as though the programmed instruction had not existed. This teacher was wise enough to revise his role during the second semester and to utilise his time with individuals and small groups in activities which emphasised the utilisation of the concepts taught and the extension of the things learned into new avenues of discovery. Another teacher remarked to me that he would use more films in his teaching except for the fact that he felt lazy, as though he were shirking his role, when films were used in the classroom.

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The second role of the teacher introduced by the task force was that of the "teacher on media". Heinich, a short time later, coined the phrase "mediated teacher" to describe the teacher who, rather than presenting information "live", placed his teaching on media ; e.g., the radio or televised lesson or programmed instruction. The teacher who appears on the television screen or who prepares the script for a televised presentation is indeed a teacher as much as the classroom teacher. This was soon recognised by professional associations when they emphasised the need for certified teachers on television as opposed to professional performers who were only directed by a teacher.

It was perhaps even more of an adjustment for the classroom teacher to accept this mediated teacher in a shared role than it was for him to accept the role of media which the teacher himself introduced into the classroom and controlled. This was aggravated by the fact that the pupils adjusted rather quickly to having two teachers even to the extent of saying "hello" to the teacher on television as the set was turned on. The teacher on media soon found that he, too, had a rôle different from what he had had as a live teacher in the classroom. His rôle required more organisation, more concern with presentational methods, consideration of pacing, etc. and, of course, he was always faced with the fact that for the first time his teaching was visible to others.

C. TOOLING UP

As Finn pointed out in his study (15), the cost of tooling up for technology is great. A new technology of any size and consequence in a society such as ours can be developed only with considerable support from a federal government. The railroads, the highways, jet aircraft and the more recent space travel are all examples of this. In the United States in the late 1950s, a great public concern to increase the quality of the schools was quickly followed by Congressional action. This was manifested by the sudden input of large amounts of money from the federal government available for purchase of materials and equipment and for the continuing education of teachers as well as to fund research and experimentation in the more effective utilisation of new media. This influx of money was started with the National Defense Education Act of 1958 and has continued to the present time. In 1958, the annual expenditure of elementary and secondary schools for audiovisual equipment was about \$62 million ; by 1968, it was about \$253 million.

In addition to the impact the funds made on the tooling up of the schools and the retraining of teachers, there was the attitudinal impact that came with federal legislation "to mobilise the latest and most effective communication technologies in support of classroom learning". Legislation went a long way in legitimizing the use of audiovisual materials in the minds of the teachers and perhaps, of equal importance, in the minds of the public, although it did little to increase the understanding of what educational technology was all about.

The schools were a pre-technological institution operating in the midst of a highly developed technological society. The public, faced with a shortage of teachers, rising costs of education and the failures of the schools to meet society's demands, began to raise the question of whether the newer technological developments of the military and of industry did not have some application to education - concepts of cost effectiveness, of systems design and management, of planned change, reduction of labour intensiveness, programme budgeting and the like.

The period was marked also with rapid change in the hardware and software available to education. Not only was there a great increase in the quantity but also in the types of instruments available - the language laboratory ; closed circuit television ; dial access systems ; cassette tapes ; 8mm projectors ; small, lightweight projectors for individuals ; the video-tape recorders and playback ; and the overhead projector. Gradually, it became apparent that tools were available for a great number of the functions associated with teaching and learning :

Storage and retrieval of information - for example, through film and audio-tape or computer ;

Self-analysis - for example, using the language laboratory or the video-tape recorder ;

Distribution of information and data - for example, by television, radio or dial access ;

Interaction - for example, via the computer with light pen, student response systems, educational games and open-ended films ;

Self-instruction - for example, with programmed instruction, 8mm motion pictures, loops and cassette tapes.

Software too was becoming more sophisticated largely due to the impact of programmed instruction with its basis in systems analysis and design. Software producers were beginning to feel

the pressure to identify and state behaviourally the objectives being sought, to understand the difference between validated and non-validated teaching materials and to relate types of software to learning objectives.

There was much to document the finding of the earlier Finn study that education was ready for "technological takeoff". The schools were reasonably tooled up and there was an influx of additional money. There was enough variety in the hardware and software to allow it to perform various functions and objectives related to teaching and learning. There was technological know-how in the society outside of education which seemed to have some applicability to the educational problems and there was a demand for excellence, relevancy, accountability and productivity in education and a desire to extend educational opportunities to new fields such as early childhood education and adult education. What was lacking was knowledge of how to introduce planned change into a stable institution, the schools, which had a large pool of professional manpower which had been trained, for the most part, to view teaching as presenting, reciting and/or testing and grading and, further, to equate teaching and learning.

D. TECHNOLOGY AND METHODOLOGY

New tools and techniques of instruction tend to change the goals, the content and the methodology of instruction. The latter is of more concern to us in this paper.

New tools, such as television and motion picture and overhead projectors, make it possible to deliver information to large groups of students simultaneously. On the other hand, tabletop viewers for slides and filmstrips, small transistorised tape recorders and the like made it possible and economical to make non-book materials available to individual students. These advances, coupled with the long-held dream of truly individualising instruction and the need to become more efficient, led to experimentation and adoption of various new methods of grouping students for learning activities and new patterns of utilising the skills of teachers. Both of these trends are having immense impact on the role of the teacher, especially the trend towards individualisation of instruction.

There are no highly reliable national statistics available about the adoption of innovations by the public schools in the United States, but a number of relatively reliable polls have been made. The Research Division of the NEA in 1970-71 in a sampling

survey of its membership obtained the following information about instructional practices in which teachers said they were currently involved, (35)

	Total	Elem.	Sec.
Team teaching	34.1 %	38.2 %	29.4 %
Video-tape use	26.6	25.1	28.3
Dial access or remote access	1.1	1.0	1.3
Non-graded classrooms	16.6	21.4	11.2
Differentiated staff	18.3	16.1	20.8
Cassette tape use	35.0	44.1	24.7
Programmed instruction	29.9	31.2	28.5
Modular scheduling	8.5	3.0	14.8
Computer-assigned instruction	2.6	0.5	4.9
Computer use in science or mathematics	2.4	0.5	4.6
Classrooms without walls	7.2	8.1	6.2

Several developments outside the public schools were having an impact on the role of the teacher. Education in the military and industry was funded at a level that enabled experimentation in methods of training. Further, there was not the commitment to the instructional pattern that existed in the public schools. Experience showed that, in their training programmes, it was possible to use less professionally trained people with a heavier use of mediated instruction than was acceptable in the schools.

Another important development was in the area of performance contracting which got a major thrust forward when in 1970 the Office of Economic Opportunity provided \$6.5 million for experiments whereby private companies could be employed by school systems in an experimental design to determine whether they could show higher achievement gains at comparable costs than could the regular schools when teaching basic subjects to failing students. It is noteworthy that the control schools involved in the latest performance contracting study spend from 64.4 per cent to 80.9 per cent of their funds on professional teachers' salaries whereas the performance contracting companies spent only from almost zero to 66.4 per cent because of their greater use of funds for paraprofessionals and for materials of instruction. Teachers are also being nudged into

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new roles with the increased availability of "packaged courses" which utilise multimedia and incorporate procedures for the student and the teacher and frequently even incorporate the in-service education to enable the teacher to utilise the curriculum package.

It becomes quite apparent that we have at this time in the United States two levels of educational technology application in the schools. This, of course, is an arbitrary statement for discussion purposes because there is a great overlap between the two levels within a single school system and often within a single school, and perhaps the two should always to some degree both be present. But, because the role of the teacher is so different at Level One and at Level Two, it seems important to make the distinction. Snider has succinctly described these two levels :

"Level One is characterized by the 'audiovisual aid' or 'product' definition of educational technology whereby the major end is to provide materials and services to classroom teachers on demand. At this level the curriculum and the teaching functions are enriched and supplemented by an array of media and machines that are nearly always under the control of the teacher. Here success is most frequently measured numerically in terms of student and teacher use of such resources. Newer developments such as computer-assisted instruction and cable television are used at this level provided they do not significantly interrupt established class organisation, scheduling, and gradedness. In action, Level One is characterized by order and neatness."

"Level Two is characterized by a systematic or 'process' approach to educational technology that is usually based on clearly stated learning objectives. Its major end is to maximise individual attainment for learners. At this level resources are considered to be a viable mix of men, media, and machines that can hopefully be adjusted to individual learning. Here success is measured in terms of learning output usually assessed on an individual basis. Newer developments such as computer-assisted instruction are often the basis for abolishing - sometimes on an experimental basis - class organisation, group scheduling, and gradedness. The Level Two approach tends to force a consideration of basic questions about curriculum, staff functions, and instructional objectives. In action it does not look very neat." (37)

E. TECHNOLOGY AND TEACHER EDUCATION

1. Pre-service Education

The co-existence of technology Levels One and Two in the schools presents a problem for teacher training institutions. Far more classrooms are operating at Level One than at Level Two. Hence, if the institution wishes to place its teachers after graduation in jobs which bring satisfaction both to them and to their employer, then they are encouraged to train for roles which support Level One use. If, on the other hand, they wish to train for the more innovative classrooms of today and the probable classrooms of tomorrow, then they should focus on roles which support the Level Two technology. What is happening in teacher education ?

The vast majority of teacher education programmes differ little from those of 20 years ago. Teachers continue to be trained in the standard foundations and methods courses and through the student teaching or practicum pattern without meaningful options. The preparation is in the context of the self-contained classroom oriented to the teaching of academic subjects. It assumes a teacher-dominated learning pattern based chiefly on textbooks supplemented by other printed and audiovisual materials. The neophyte teacher is usually taught through telling with some showing of how it should be done. The practicum usually occurs at the end of the teacher training programme and is frequently inadequately supervised and takes place in a "less than innovative" real school situation.

Innovative practices are beginning to appear, often financed by federal funds. Many of these experiments have paid particular attention to the changing role of the teacher resulting from the impact of media. An example is the Wisconsin Elementary Teacher Education Project which was designed to develop exemplary teacher education programmes for elementary schools. A quote from the abstract of the section of the model dealing with Media and Technology Education developed by Sullivan and Iverson will illustrate:

"But, in spite of the "rub-off" effects that participation in such a program will provide, it is believed that adequate knowledge and understanding of the production and utilization of media and technology can be attained only through direct instructional efforts which are systematically organised and made available to learners. For that purpose, the Media and Technology Education Element has been prepared.

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"The Media and Technology Education Element includes three sub-elements : 1, Instructional Media and Mediated Instruction ; 2. Instructional Techniques ; and 3. Research." (25, p. 104),

In the Wisconsin model, media and technology have been moved into the mainstream of teacher education and the elements that are to be included in the training programme are competency-based. However, one notes that the emphasis is still on "aids", Level One, concept of technology. The information given to the teacher deals with selection, construction and utilisation of materials which would be the type of training that would support the teacher operating in the Level One concept of technology.

Other innovative pre-service teacher education programmes utilise laboratory-type experiences and self-instructional modules. An example is the programme at Kent State University where the Instructional Resources Center is an agency of the College of Education serving the 217 faculty members and over 12,000 students of the college. The Center consists of five areas : the curriculum materials library, equipment training laboratory, production laboratory, self-instructional learning laboratory and auxiliary services (video-taping, photography and art services). Each area is supervised by one of the full-time staff members of the Center, co-ordinated by a half-time graduate assistant and additionally staffed by trained students. About one-third of the education majors elect the basic media course. Other students are exposed to the resources of the Center as a part of their methods courses, through orientation experiences and demonstrations, through use of the Center in relation to their student teaching work and by making use of the self-instructional opportunities of the Center.

A few quotes from recent personal letters will indicate the nature of the small experiments going on here and there in teacher education :

"We are experimenting with a course in which we attempt to demonstrate by precept some of the newer roles in teaching. In this course, we use specially prepared filmstrips accompanied with narrated tape which explains the illustrations in the filmstrips, and an occasional lecture demonstration during which interaction is encouraged.

"We at the University of Connecticut have not been able to move in any significant way into so-called independent study utilization. I do what so many other instructors refuse to

do I get my prospective teachers to work, work at making creative decisions for using media for specific groups and individuals. As far as professors are concerned, we do not and cannot use group methods. In our graphics and instructional development programs we work only with those who bring materials, who sense needs. This overburdens our staff now, and costs over \$20,000 annually for supplies."

Changes are also taking place in the methods used to teach the teacher. This, of course, serves as an example to the teacher of methodology that they can use in turn. There is a growing trend among universities to set up teaching problem laboratories, centres for the teaching professions, instruction design laboratories and similar services known by many other names. The purpose of these is to help interested professors in redesigning their courses and the methodology which they use. The results may range from relatively little introduction of media to courses which employ audio-tutorial or complex instructional package methods of teaching courses.

Teacher education institutions are inhibited in their efforts to provide better experiences for teachers in the use of media and technology by a number of factors. Among these are :

- The need to re-educate teacher educators regarding the nature and scope of instructional technology.
- The difficulty in providing opportunities to practice innovative strategies as a part of the teacher training programme.
- The lack of equipment and materials in the college of education.
- Too little time in the four-year teacher education programme.
- The need to train teachers for schools as they now exist.
- The long accepted belief that the teacher is a generalist who, if given proper theory, can adapt to changes as they occur in the instructional setting.

2. In-Service Education

The demands upon the public school, the dissatisfaction with teacher education and its inability to institute rapid changes and the influx of federal monies came together at the same time to focus on "retooling" the teachers already in service through institutes and workshops. These started in the areas of science and

mathematics following the new curriculum developments and then spread to areas of foreign language, English, social studies, music and other curriculum areas. Since 1965, when the first educational media institutes were conducted, more than 10,000 persons have either been introduced to or updated in their skills and knowledge of instructional technology through participation in these institutes - again, largely Level One media institutes.

Impressive as these figures might seem, one has to consider that about one-quarter of a million new teachers are prepared for the labour market each year. If these are prepared for traditional classroom teaching, retraining through the institute programme is really a losing battle - a case of too little and too late. This has led to serious consideration of new ways in which the continuing education of teachers can be accomplished. One proposal is that basic preparation occur within the four-year programme at the university with arrangements for a continuing internship programme for one or two years carried on at the employing institution followed by provisions for continuing education based upon identified needs of the teacher. An alternative plan is a joint educational venture in teacher education between the universities and the public schools whereby the four or five years of training would be divided with part of it occurring at the university and part in the schools which would be used as laboratories. Interest in the continuing education of teachers has been fanned by research evidence which supports the view that teaching is not a generalised capacity to relate to children and solve instructional problems. Joyce states this well :

"The experience of innovative movements in education has shown us that the conception of teaching as a general capacity to educate is erroneous and disfunctional. Most teachers simply have not effectively adopted the new roles or learned the new strategies unless a massive in-service effort was made.

"However, if teaching is thought of as the ability to provide a particular, specialized kind of educational service, it becomes at once apparent that there are a multitude of specialized services which make quite different demands on the teacher. For example, helping children write creatively is different from teaching biology inductively. Helping children use instructional systems is different from providing counselling for them. No doubt some teachers can, without special

training, move from role to role and strategy to strategy. That a few can do this should not deceive us into making the inference that all teachers can learn to do it as a result of general or even special training.

"It is far more productive to view teaching as a set of role-competencies each of which has to be learned specifically. From this stance a teacher becomes a person who can engage in one or more types of teaching." (24, pp. 156-157)

There is, then, a renewed interest in the continuing education of the teacher and some trends concerning new ways of accomplishing this. Current thinking embodies the idea that any innovation introduced into a school system must be accompanied by appropriate in-service training. The instruction should be specific to the skills required, programme-oriented and preferably occurring at the teaching site. In an attempt to meet these specifications, courses have been devised, competency-based modules on specific skills developed, micro-teaching introduced and attention to the including of teacher training in curriculum and material packages.

One illustration is a project of Research for Better Schools, Inc., Individually Prescribed Instruction, an instructional system. During the project, it became obvious that teacher training was one factor that had to be given serious consideration in order for the project to succeed. It was further concluded that the retraining programme for teachers needed to be individualised about individualisation and that, whereas specifics about the mechanics of the system were needed, there also was a need for theory concerning individualisation. The training programme developed for teachers were based on the same IPI model that the teachers were to use with the students. Not only was training needed to orient teachers to the individualised system but also continuous training for the refining of their instructional skills and strategies.

In the fall of 1967, another large programme of individualised education was introduced, Project PLAN (Program for Learning in Accordance with the Need). This instructional plan also differed from the usual instructional programme in its classroom organisation, materials, method of instruction and teacher and student roles. For this reason, one of the important components of the project was the programme for teacher development. PLAN put emphasis on teacher activities such as tutoring, counselling and instructing students in the technique of managing their own behaviour. Observation of teachers, however, indicated that they were spending most of their time in organisational and managerial

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activities. The training task, therefore, was helping teachers modify their skills ; acquiring new skills ; reinforcing the procedures of acquiring new skills and modifying current skills ; helping teachers maintain the new behaviours and extinguishing behaviours which were not compatible with Project PLAN. Each teacher-trainee was given an individualised programme which grew out of observation of the teacher in his classroom to identify his training needs.

Another harbinger of progress is seen in the focus of current educational journals and in the titles of educational texts ; e.g., Educational Technology : The Changing Role of the Teacher ; Development Efforts in Individualized Instruction ; Instructional Design ; Planned Change. It is also indicative of the times that among books such as these is a new one entitled How to Use the Bulletin Board.

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FUTURE TRENDS AND THEIR IMPLICATIONS

A. TEACHER ROLE IN TRANSITION

Although authorities seem to agree that the role of the teacher in the majority of schools has changed little from the old "assign-test-grade" pattern, it is true also that a substantial percentage of the schools are making changes in curriculum, staffing patterns, grouping and organisation of students and the like, and that most of these innovations are "technology-dependent". This means that they can be achieved fully only through the use of educational technology. In the schools with innovative programmes, changes in the role of the teachers are slowly evolving. Authorities feel that the changes are greatest at the elementary level because of the greater flexibility permitted the teacher at that level.

Changes in teacher role occur gradually but teachers themselves seem to sense that their role has changed. A study made in which 3,000 teachers were sampled by the American College Testing Program of Iowa City, Iowa, got the response that teachers are called upon "to be more of a parent, counselor, policeman, and psychiatrist than a teacher". This could be interpreted to say that teachers recognise that their role is changing and that they do not like and/or are not prepared for the direction in which the change is progressing. The change is probably not in agreement with their view of the proper role of the teacher. (20, 41, 16)

Teachers and researchers involved in technology-dependent innovations provide us with valuable clues as to the emerging role of the teacher. For this reason, a number of specific cases will be cited.

**1. Oakmont Elementary School, Claremont Unified School District,
California**

Oakmont is a non-graded elementary school where programmes are individualised for each child. Practices which make this work are co-operative teaching, central attendance, multi-age classes and flexible groupings. The teachers make these comments on the differences of their roles in the non-graded schools in an unpublished report.

"I. Teacher's prep time

"A teacher deals with lists of students and where each one is in the material chosen for him. A teacher ends up with several kinds of programmes going on in the room at the same time in a given subject. The amount of record keeping is greater. The diagnostic period at the beginning of the year is critical. The teacher as a resource person for the student and his goals is a most demanding role.

"II. Teachers and other teachers

"They work very closely with each other and it gets to be like a family. A tremendous amount of in-service takes place as teachers pool their various areas of expertise in order to increase the alternatives necessary for each child (who is assumed to be at different levels in all areas). There are running conversations that go on from day to day regarding where a child is best placed to perform at his best.

"III. Teachers and students

"Since grade standards are out, individual programmes must be set up. Teachers get to know more about students than when a certain level of achievement was assumed to go with a certain grade label. Labelling of all sorts becomes suspect. (The diagnosis is kept open.) Self-pacing is instituted where possible, and this relinquishment of some decisions appears to add to mutual trust. Acceptance is a key attribute for a teacher and is passed on to students. ("You are good in math, your friend is good in reading - everybody is different and that is a good thing, not a bad thing".)

"IV. Teachers and administrators

"A principal cannot say what book a teacher is using in a given subject and must check with the teacher if a question arises. A team of teachers makes many decisions that formerly teachers did not need to make, e.g., certain books used to be distributed to each class by grade. A principal is in the position of helping teachers find alternatives. The range and variety of alternatives gets bigger and bigger, and both teachers and principal end up keeping a lot of data in their heads.

"V. Teachers and parents

"Conferences centre on the concept of progress (where he was, where he is, what can be expected). With new parents, time is needed to explain the programme. Without grade standards, conference time is required to reassure parents about progress."

2. McCluer High School, Ferguson-Florissant District, St. Louis, Missouri

The following is excerpted from a report from the school district based on observations of the impact on the teacher's role of extensive media use.

At first, most teachers viewed media as an adjunct, apart from their instruction. The quality and extent of their experiences were limited ; reactions tended to be negative ; that is, teachers viewed media as a way of mechanising and dehumanising instruction.

As successful models of media were presented and used by peers, more and more teachers saw media as means of providing more time for teachers to use meeting the needs of students. Media also provided more time for one-to-one teacher-pupil interaction. Once their views changed and media were considered a legitimate part of the unit experiences, the quality of use increased as did the quantity. Then,

- Teachers began to differentiate media used with each class.
- This led to differentiating media use within a class.
- Teachers spent more time developing and organising print and non-print materials.
- Teachers spent more time working with media specialists, librarians, and reading specialists.
- Many teachers began to see the need for and experiment with an individualised curriculum.

- Teachers had to learn to use a wide variety of AV hardware.
- Teachers used media as a means of solving weaknesses in their instruction - remediation, reteaching, closer examination of demonstration, etc.
- Teachers spent more time designing curriculum.
- Students started to use media as a means of communication in completing assignments.
- Teachers started to use media as an area of study - English and social studies.
- Service area (e.g. guidance) began to mediate parts of their operation.

3. Marshall High School, Portland, Oregon

A computer-generated, modular-flexible schedule. (Information from an unpublished report).

The goal is to individualise teaching and learning by breaking the school day into small modules of time to fit the activity taking place. Four teaching-learning modes are used : large group instruction, medium-sized groups for laboratory activities, small group learning experiences, and independent study. About 80 per cent of the staff is organised into forty teaching teams. A typical teacher is involved in class activity approximately two-thirds of his teaching time, with one-third of the time given to student conferences, planning and evaluating student work or - if the teacher is a member of a team - working with other team members.

The large group, up to 400 students, situations are "presenter-dominated" making heavy use of sight and sound. A considerable amount of advanced and detailed planning are required for these.

The feeling of the staff at Marshall High School is reflected in this statement by one member :

"From the teacher point of view, those of us in the science department are generally very happy with many of the aspects of the new program. We would not like to go back to the traditional fifty-five minute period, five days a week type of program. The longer laboratory periods are very valuable. The freedom that students have to come in and make up work, go over work again, add to their work and initiate new ideas is very valuable. The opportunity to have teacher-student conference time within the school day is helpful. The freedom and relaxation of the new program is valuable to us, and the teacher-to-teacher contact including day-to-day critiques,

either vocal or observed, of each other's work has helped us all to grow. Planning with each other, we have the combined strengths of at least two people's ideas whereas we used to have little more than our own ideas to call upon. The variety of the program from day to day is stimulating in itself. Problems have not disappeared, but we now have some new and better ways to attack them."

4. Multi-Unit Elementary Schools Developed by the Wisconsin Research and Development Center for Cognitive Learning

In 1971, about 70,000 children in 600 schools in 27 states have been involved in a multi-unit plan which is an organisational pattern that replaces the self-contained classroom with a non-graded instructional unit. Each unit contains 100-150 children with four age groups, 4-6, 6-9, 8-11, 10-12. Each unit has a leader or master teacher, two or three staff teachers, a teaching intern and one or two aides. The unit staff is supported at the next level by the "instructional improvement committee" consisting of a school's unit leaders and principal. Above this, there is a school-system-wide policy committee. This design is considered to be the first step in a new system of elementary education called Individually Guided Education (IGE). A study conducted by the University of Oregon showed that teacher morale and job satisfaction were higher in these multi-unit schools. It also found that multi-unit teachers spent more time planning for instruction and specialised more. The study also showed that children in the multi-unit plan received more attention from teachers individually and in small groups.

5. Individually Prescribed Instruction (IPI) and Project PLAN - Individualised Instruction (45)

We have previously spoken of IPI, an instructional system, which is now being used in more than 300 school systems in 38 states, and of Project PLAN which uses available instructional materials, a curriculum map of 4,500 cumulative behavioural objectives and the input of student records which, with the aid of the computer, helped the teachers make personalised plans for 30,000 students last fall in schools scattered throughout the nation.

In IPI and PLAN, and in any of the other more structured systems for individualising instruction, the role of the teacher seems to fall into three categories :

- i) Operating the system ;
- ii) Supplementing the system to enhance adaptation to individual needs, and
- iii) Providing for the achievement of goals possible only with teacher intervention.

It is evident in all cases that careful preparation of teachers to carry out these new roles is necessary as a part of the programme introduction.

6. Individualised Instruction - Edling Research (13)

In 1968, Edling collected data on over 600 programmes of individualised instruction throughout the United States and selected 50 sites for visitation. These were sites that represented a wide spectrum of procedures, four types of school districts and the major geographical and population areas of the United States. The study found that the single most essential element for successful implementation of an individualised plan was additional training and planning time for teachers and administrators. Most teachers needed to develop new skills in diagnoses and in prescription preparation. The study recommended that staff training and planning time be initiated well before the attempt to implement even a pilot programme is undertaken. In addition to acquiring new knowledge and skills, teachers must select and prepare new materials and practise the administration of these materials until they develop the competency comparable to present group-oriented procedures. A second and almost equally essential element, teachers said, was additional materials of instruction.

Teachers said that there is more work involved in an individualised instructional programme but, at the same time, the majority felt that they have never been more satisfied in their teaching experience and would not wish to return to a traditional instructional programme. Some teachers, however, did not feel comfortable with the individualised format. The hardest adjustment for the teacher is during the first two to six weeks of the programme.

7. In Summary

It seems evident that as the learning environment becomes more "media rich" and "technologically oriented" the direction tends to be away from the lecture-tell method and in the direction of discovery methodology and more individualised instruction. This tends to increase the time the teacher spends with individual

students and in tasks involving management, diagnosis and prescription. Edling sums up the situation when he writes :

"The great problem posed in education by the development of these new communication media is the difficulty for those who have been brought up in an earlier tradition to visualize a role for themselves in their chosen vocation other than as primarily transmitter of information. The traditional role of information provider, which has come to be viewed as a primary one, is probably one of the least efficient and effective that teachers can perform in the learning process ; this fact has been demonstrated repeatedly in experiments on human learning... The teacher's great potentialities actually exist in his capabilities for observation, evaluation, and adaptive response."

B. PREDICTIONS FOR THE FUTURE

It is evident that innovation is now an accepted concept in education, and it also seems apparent that most of the innovations being tried today are technology-dependent. When a technological advance is made, it is impossible from looking at the beginning stage to predict with accuracy what the end result will look like. This is as true for education as it is for other aspects of society, but we must try, from the transition stage that we are now in, to identify general trends or directions. A sizable number of scholars and researchers have been trying to do just that and it may be helpful to examine the direction of thinking that a few of these have taken.

1. Hansen and Harvey

In their research study on "Impact of CAI on Classroom Teachers" (18) the following generalisations were projected :

- Teachers will perform much less of the informational presentational function presently found in our classrooms.
- Teachers will play less of a corrective role in terms of their questioning and evaluative behaviour.
- Teachers will become more concerned with a host of individual characteristics important in designing instruction strategy ; thus, the array of instructional resources and the decision-making found in employing these resources will

become more complex and also more frequent in terms of teacher behaviours.

- The teacher will have a greater involvement in guiding individual students rather than maintaining classroom discipline.
- Teachers will have to perform a wider range of discussion techniques involving a richer opportunity to affect the social and emotional behaviour of students.
- Teachers will have a greater array of differentiated professionals joining them in the team effort to provide optimal instruction.
- Teachers may take on more of the diagnostic assessment and prescriptive functions presently assigned the school psychologist."

2. Heinich (19, pp. 139 and 154)

"It is clear that the technologies of instruction can be assigned the burden of direct teaching, and decisions concerning method, materials and content are made by the professionals who are responsible for incorporating instruction in mediated forms.

"Eventually, technology will shape up education the same way it has industry : a reshuffling and reassignment of personnel. Two decades ago the number of teachers engaged in mediated instruction was extremely small and limited pretty much to films and educational radio. The number of teachers involved in locally produced media was, of course, even smaller. The last decade has witnessed a sharp increase in teachers engaged in mediated instruction due principally to the introduction of educational television, programmed instruction, and the language laboratory... In twenty years, perhaps one-third of the teaching profession may be engaged in preparing instructional materials with little, or no, direct face-to-face contact with students. When education understands this at the operational level, less concern may be expressed about replacing teachers - they will be "re-placed" to the other side."

3. Loughary (28, p. 109)

"It is (or at least, soon will be) highly misleading or inaccurate to speak of 'teachers' as a general professional group.

"The new teacher must have a method - a system, if you will - for determining what teaching resources are available and for constantly deciding how best to use them with individuals and groups of pupils of various sizes. Instruction will become increasingly dynamic and complex, and more of the teacher's attention will be needed to monitor and control the instructional process so that students will be engaged in maximally effective learning at all times. Students, we suspect, having experienced truly individualized and enriched instruction and immediate feedback of the results of their work, will demand rich and meaningful instruction.

"Man-machine systems in education can contribute tremendously to the individualization and enrichment of instruction, and at the same time will exert great pressure toward changing traditional teaching functions. It is not a question of whether the requirements of teaching will change, but rather one of how much time there is to prepare for changing requirements."

4. Trow (44, p. 159)

"At least six different categories of subject matter specialists may be expected. As learning materials centers are developed, librarians and audiovisualists, as curators and consultants, will advise staff members and students in the use of available materials. Programmers will select, revise, and construct films, tapes and programs for specific local purposes. Monitors will be needed (they have already appeared in language laboratories), to run the several subject matter laboratories, to see that the different kinds of apparatus are operating satisfactorily, and to see that materials are properly distributed ; but primarily to help elicit and reinforce correct responses. They can even serve as what might be called "climate-control officers" to help create a friendly, rewarding social atmosphere. And demonstrators, now called TV or studio teachers, will be those especially talented in presenting material via this medium."

5. Broudy (33, p. 92)

Broudy envisages three types of personnel : 1. instructional technicians whose responsibility would be to assign pupils to instructional programmes and reassign them as the demands of individualised instruction dictate ; 2. instructional programmers whose

job it would be to write the programmes that are fed into the system and 3. Instructional managers whose responsibility it would be to turn the instructional packages into schedules to be implemented by instructional technicians and to exercise general supervision over all instruction.

6. Ward and Jung (33, p. 308)

Ward and Jung also make a number of predictions, among them, that technology will increasingly supplement but not replace the classroom teacher ; the functions of the teacher will be performed more effectively as a result. They also see a growing array of learning materials media and instructional strategies becoming available about which the teacher will need to make rational decisions. More specifically, they say :

"The teachers role in the future is likely to feature :

1. A decreased emphasis upon information-giving ; 2. Increased attention to the development of higher order cognitive outcomes ; 3. Increased attention to the development of constructive affective outcomes ; and 4. The integration of both cognitive and affective processes for the improvement of learner outcomes."

7. Rosove (14, p. 13)

(Rosove was a member of a team founded in 1967 to conduct studies of future educational needs and resources which included the possible roles of educators in the late 1980s.)

"This point of view has profound implications for educational policy. It places the "teacher" in the nerve center of the man-machine learning system. It makes possible a transformation in the traditional role of the teacher. While the machine takes over the function of dispensing facts or data, or the explanation of a concept or theory, the teacher

1. serves to facilitate the learning process by providing assistance, guidance and counseling as needed by the student ;

2. designs and conducts experiments on the learning process using the actual learning situation as his laboratory ; and

3. contributes to the development of improved man-machine learning systems and procedures."

8. Tabachnick and De Vault (25, p. 43)

"It may be anticipated that those activities which today occupy a major portion of the teacher's time will not have the same priority on his time in schools after 1975. New activities and new responsibilities for teachers may be expected to evolve.

"Before considering these potentially new roles, a review of the roles which teachers presently assume is in order. These, in order of priority on the teacher's time, may be listed ; 1. Information transmission ; 2. Management and administration ; 3. Guidance ; and 4. Modeling.

"In schools beyond 1975, it may be expected that this order of priorities for teacher roles will be precisely the opposite order from that in which they are perceived in traditional schools. Teachers will serve primarily as models and as guidance counsellors and only incidentally as managers and administrators."

9. Doyle and Goodwill (12)

This research study utilising the Delphi technique asked a panel of over forty experts to forecast the direction and degree of change in societal values, the likelihood of the development and widespread adoption of educational technologies and changes in the role of the teacher over the next thirty years.

"Some of the changes forecast are most interesting and even startling when viewed in the historical context of student-teacher-classroom relationships.

"Over the next fifteen years we may expect to see the phasing out of one of the long-established approaches to teaching and the phasing in of one which will be totally new. The educational process has been characterized by what we have called 'the traditional imparting of knowledge' whereby the teacher or instructor leads or directs the class while 'encouraging interaction and group learning'. We can expect to see a continuation of this teaching approach up to the middle or latter part of this decade. At that time we may anticipate an important change as the teacher begins to perform as a 'group leader', while acting as a 'catalyst to the learning process'. As we approach the mid-eighties there will be a further significant change as the teacher becomes more of a 'sympathetic resource utilized at the students' request'. Naturally, this

implies a major change in our concept of 'teaching', and in our concepts of 'education' and 'learning'. This also implies a number of other possible developments.

"... Thus the picture which this narrative presents is one of more and more student involvement and participation, and of more individually tailored curriculum, with the teacher having less of an authoritarian role - a picture which is entirely consistent with what was outlined in the section on societal value changes."

10. In Summary

According to the experts, a number of trends are indicated which are of strategic importance in predicting the future role of the teacher.

- Individualisation of instruction

This is not to be confused with self-instruction or independent study although it usually makes use of both. It does mean the end of lock-step education and the recognition of the importance of individual differences.

- The humanisation of education

This includes successful learning for all students ; options for teachers ; choices for the student concerning what he learns, when and where, how he learns it ; changed patterns of student-peer-teacher relationships.

- A futuristic look in education

The focus appears to be away from learning facts about the past to learning how to learn, the inquiry and problem-solving methods which enable individuals to cope better with a rapidly changing world and with uncertainties.

- More emphasis on cost effectiveness in education

Technology has embodied in it the systems concept with its constant evaluation, feedback and readjustment cycles. It also embodies the concept of trade-offs and reallocation of resources and may well lead to a readjustment of budget allocations in education.

- The disappearance of the teacher generalist

This is partly a recognition of the varying needs of students but also of the fact that teachers too are individuals with varying capabilities and life styles. The trend seems to be toward a team of more specifically trained teachers with a support staff of men and machines.

- A change in man-machine relationships

Men and machines will cease to be protagonists but will operate within a system playing related but distinctive roles toward the achievement of objectives.

- A shift in emphasis from teaching to learning

This is succinctly stated in the concept that if the student has not learned, the teacher has not taught ; thus, the burden of proof is shifted from the student to the teacher.

C. IMPLICATIONS FOR TEACHER EDUCATION

The prospective teacher entering college today will not be in the teacher market for four or five years and, in the meantime, education has moved forward five years so there is almost a ten-year lag between the entry time of the prospective teacher into college and the time when he will be working in an educational setting. There is also evidence that the so-called educational "theory-into-practice-lag" which once was said to be fifty years and which has dropped to twenty, may, in the near future, be reduced further. It is necessary, therefore, that we train teachers for the future, and not for the past, perhaps, that we train them for a life of professional change per se.

It is not the function of this paper to deal with current and projected patterns for the re-organisation of teacher education. It does seem appropriate, however, to make a few generalised comments about the implications for teacher education of the predicted role of the teacher. It should be obvious that new concepts and skills should not be merely pyramided on top of current patterns and content of teacher education, but the whole needs to be redesigned and substituted for much of the current content and methodology.

i) The teacher of the future will need to have a working knowledge of technology including man-machine relationships, the scientific method of problem-solving, and particularly technology as applied to educational practice. This will include a compassionate understanding of the truly humane task of the human teacher, preparing or choosing teaching objectives, management of systems, and the like. LeBaron summarises this change of focus :

"It would seem that technology offers a teacher a terribly exciting opportunity. Let's suppose that 70 or 80 per cent of what the teacher now does is mechanized. This means that the remaining 20 per cent - the truly human aspects of teaching - can receive 100 per cent of the teacher's attention...

"The essentially human functions, then, are choosing developing and reacting to unique situations ; feeling - being emotional and loving, a total person as it were ; creating - designing the machines to relieve the routine and release the chance to feel ; and cognating...

"In brief, teaching is a system of actions intended to induce learning." (27, p. 451)

ii) The teacher of the future will need the abilities required for selection, modification and/or production of instructional materials and other systems. In other words, instructional design should be a part of the training of the teacher. It is good to note that among recent textbooks appearing are ones entitled Teaching and Media : A Systematic Approach, Gerlach and Ely ; Instructional Design : A Plan for Unit and Course Development, Kemp (26) ; Instructional Systems, Banafy (5) ; Instructional Design : Readings, Merrill (31) ; and Selecting Instructional Strategies and Media : A Place to Begin, Merrill and Goodman (32).

iii) If teachers are not to be threatened by innovation and a new role, the development of supporting attitudes is essential. It appears that the teacher of the future should not be threatened by non-structure in the environment or by non-directive situations, or by trial and error developmental work. He must be comfortable with having his teaching visible to his peers, and at times, as via television, by the community. He must be able to take criticism and evaluation. He must get more job satisfaction from seeing learning occur than in the performing of a skilful teaching act. In short, he must become a professional in the true sense.

iv) The teacher of the future must feel comfortable with and be skilled in a team operation. This means learning to share decision-making, skilful use of support personnel, student and parent involvement in the teaching-learning enterprise, and operation in an inter-disciplinary setting. Team operation also implies differentiated roles. Teacher education programmes need to differentiate between these roles and develop training programmes for specific skills. Probably for this reason, teacher education will become more competency-based. Teachers will need to be guided into the types of roles which suit their competencies and life styles.

v) One trend that seems certain for the future is that toward the individualisation of teaching and learning in order that the potential of each student will be developed in accordance with his capabilities, interests and needs. This means that teachers will need to cope with a more pupil-centred learning situation and one in which the student is much more active than he has been in the past.

Wisegerber (46, p. 250) lists some nine areas of competency which he feels are paramount for training teachers for individualised instruction for each child :

- specifying learning goals ;
- assessing pupil achievement of learning goals ;
- diagnosing learning characteristics ;
- planning long-term and short-term learning programmes with pupils ;
- guiding pupils in their learning tasks ;
- directing off-task pupil behaviour ;
- evaluating the learner ;
- employing teamwork with colleagues ; and
- enhancing development.

vi) In the school of the future, the teacher will have more opportunities to work with students on a one-to-one tutorial basis. This personalising of education will require a set of skills which Merrill has characterised as social interaction skills (31, p. 55). These include skills of personal relationships which enable the teacher to establish personal communication with his students and also the knowledge of group dynamics which enables the teacher to promote group processes that otherwise facilitates learning outcomes among students. Being able to motivate students and to set

up contingencies which reinforce growth that will also be an important role.

Problems ahead

Whether or not the predicted future will come to pass, and if so, at what rate, will depend to a great extent upon how certain problems and questions are answered. Of the many that can be identified, six of them have been selected for discussion.

a) There are many things we need to know before we can proceed competently with the innovations in education. To get some of the answers will require basic research, in other cases, feasibility studies.

We certainly need more effective measures or indicators of success or failures of the innovative practices. On the standardised tests, there seem to be, for the most part, "no significant difference" but observations often tell us that pupil behaviour and the job satisfaction of the teachers changes towards the positive.

We need to know much more about teaching styles and how to identify them, about learning and cognitive styles of students and how to identify them, and the significance of matching teaching styles and learning styles. We need to know how to relate materials of instruction to teaching and learning styles and learning objectives. We need to do task analyses of teaching in order to refine and define what teaching is. We need to identify which are the "human" roles in teaching and which roles can be handled by mediated methods.

b) Another major problem area is that of changing the institutions of education and teacher education and the behaviour of teachers.

As pointed out earlier, the problem in the United States is complicated by the fact that our educational system, including teacher education, is decentralised. For this reason, it is impossible to make changes by edict from the top or even at the state level. Change has to take place in thousands of schools and school districts throughout the United States on an individual basis. This is costly and time-consuming. As Lloyd Trump has remarked, "Every principal knows that it is not easy to pierce the barrier of the classroom door". Regardless of what type of demands, urging,

cajoling or in-service education has taken place, when the teacher closes the classroom door of the self-contained classroom, what he does is under his own control and is usually adapted to his own teaching style. To a large degree, the teaching act today can only be described as taking place in a pre-industrial age, cottage industry kind of milieu - a situation that has been solidified into a government bureaucracy of enormous dimensions.

Even when teachers are desirous of introducing innovations and changing their roles, they frequently find that they are inhibited by various administrative routines, budget controls and the like. In a recent letter to the author, Hamreus summarised these problems as follows :

"My own experience would cause me to make the following (compressed) observation. Technology changes the role of teachers only when the rest of the system changes sufficiently to permit the teachers to change. In other words, teachers can be taught to utilize new innovative teaching techniques but usually are kept from doing so because : her fellow teachers are not equally prepared and thus create an overwhelming resistance ; her administrators are not convinced it is necessary and thereby resist the expenditures or reorganisation of resources required ; the constituency of the school is suspicious of its relevance and thereby creates a resistance force ; the teacher education section of the college or university servicing that area are not convinced or trained in the innovations application and thereby are non-supporting ; the State Department has individual proponents but has no clout with the 'door keepers' in the school district to give the teacher the needed support."

The whole problem of institutional change, as it applies to the education system in the United States, was summed up neatly in one sentence in a recent educational publication of the Association for Supervision and Curriculum Development : "What emerges from this consideration of the system of education in the United States is an enormous capacity to absorb change while not changing at all".

Many of the innovations now being introduced into education are dependent upon our ability to change society's view of teaching as well as the self-image of the teacher. Research evidence indicates that we are most successful in causing the teacher to alter his role if he is involved in planning and implementing the

innovation. Some authorities, and they are supported by considerable research, doubt that teachers in service can be retrained in such a way as significantly to affect their teaching style.

Joyce (24, p. 182) reports research to show that "classroom styles of teachers are more notable for their similarity than for their differences and that it seems possible that there is indeed a national teaching style which has certain definable characteristics". He also related how the behaviour of student teachers is shaped during their practice teaching so that students become less open and less flexible and are thus moulded into the style of the national norm. Some research indicates that teaching style varies as a result of teacher personality, but further research has indicated that teachers of very different personality types can learn a very large variety of teaching strategies. Joyce draws these conclusions : (24, p. 192)

"The homogeneity of teaching styles, combined with the relative homogeneity of curriculums and school organisation patterns, indicate that teaching has been a normative rather than a technical activity. That is, teachers have been behaving according to a normative concept about what teaching is, and they, consequently, look similar when they are at work. A technical concept of teaching defines teaching as decision-making skills and teaching strategies which the teacher applies to each teaching situation. When he does this, the results vary greatly, for his decisions are different in every case and his strategies vary as a consequence. Hence, a technical concept of teaching leads to a more heterogeneous picture than we apparently have at present, because it assumes that teachers will use their skills to create a variety of environments tailored to the needs of their students.

"Performance-oriented education has to be built on the assumption that teaching is a technical matter - a process of decision-making, interacting with children, developing of content, etc. The clustering of teaching behaviour around identifiable norms suggests that it has been an intuitive, imitative act.

"Probably the implementation of performance-based education will require the socialization of the education profession into a technical stance which is foreign to the norms of contemporary practice."

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Innovators are hampered by our lack of knowledge about how to introduce planned change into institutions. Although the literature in this field is increasing, there is still a lack of feasibility and field studies. There is an argument in education as to whether innovations should be introduced gradually on a piecemeal basis or as a total system such as when a new school is opened or a new curriculum introduced.

We do know that acceptance and success of innovations are reduced when innovation is contrary to the beliefs and attitudes of the person whose role is to be changed. One of our problems, therefore, is the fact that many teachers and administrators in the educational system are not convinced of the relevance and effectiveness of instructional technology. We may be more successful if we can convince teachers that technology provides them with the opportunity to capitalise on their uniqueness through task differentiation and by assigning less rewarding functions to media.

c) A third problem area relates to the question of whether or not the current method of development and distribution of instructional materials and equipment can adequately supply, at acceptable prices, the hardware and software needed to implement instructional technology. Although a few schools produce some teaching materials, fewer will probably be able in the future to develop satisfactory competency-based materials. The development, production and distribution will probably fall, as it is at present, largely to the highly competitive profit-making education industries. The federal government has taken some interest in the development of experimental curriculum packages, but their support has been only a "drop in the bucket" and the development cost of the new types of teaching materials are tremendous when compared with the textbook development of the past.

In the hardware area, one of the problems is the matter of the lack of reliability and compatibility of the equipment. There is a danger of standardising new equipment too rapidly, but failure to standardise at the appropriate time causes problems of software utilisation. Being at the mercy of the profit-making sector of society, we, in education, frequently find that we are adapting to our needs equipment that was originally produced for the general public market. At the same time, we have not been in a position to specify our needs to the producers of equipment and materials. Schools must develop the will and capacity to specify with much greater precision just exactly what their needs are. A technological society such as ours can produce just about anything once a market for it has been clearly specified.

d) What stance should software producers take concerning the role of the educator in relation to curricular packages? Can he assume that the package can remain intact or what some people refer to as "teacher proof"? In this case, the educator's role is to select from multiple packages in the same curricular area. On the other hand, if the producer can assume that the teacher will function in the role of adapter or modifier of a curriculum package, he will tend to provide the teacher with a loosely structured set of materials which he can adapt to suit his own teaching style and the learning needs of students. To what extent should teachers be trained to design their own instructional units? In this case, the role of the commercial producer is different again.

e) Teacher militancy is growing in American education. It has to date had great influence on matters of salary and fringe benefits. It began as trade unionism but now the same type of contractual negotiations are being spread more and more to instructional or "professional" areas. In the not too distant future, this may have a tremendous impact upon the rate at which innovations can be introduced into schools. The subject is important enough to have warranted a research grant from the Office of Education to study teacher militancy and instructional media. Dawson found that the teacher leaders interviewed believed that teachers were relatively uninformed in the area of instructional media and that there might be a possible loss of classroom autonomy for the teacher if media were to be used extensively in the schools.

The application of instructional media will have implications for teacher welfare and working conditions. It also means that money for the purchase of the materials must come from already inadequate school funds and will, therefore, be competitive with teacher salaries. For these and other reasons, instructional media and technology will increasingly be a part of collective negotiations. We may find the teacher faced with a choice between higher salary or better teaching material. One alternative would be to purchase some of the larger blocks of curriculum packages from capital funds spread over a number of years rather than out of current operating budgets, but this, to date, has been tried in very few places. Because the initial cost of the introduction of technology is very great compared with usual expenditures in education, some alternative financing plans may be essential.

f) The current debate ranging both in educational and lay magazines of "technology versus humanism" is also a deterrent to

the introduction of instructional technology in the schools although it can easily be shown that much of this debate reflects serious misunderstanding of both "technology" and "humanism". Technology in itself is neither good nor bad, humane nor inhumane. The morality of any technology is a function of the human use and human ends - that is, new moral issues are raised and we are forced to re-examine our goals. This is true in education as it is in the rest of society which is just beginning to realise that because technology makes something possible is no reason for doing it.

Steps to Facilitate Role Change

There are steps which could be taken today and which have the possibility of hastening the introduction into the schools of educational technology and the accompanying role changes of teachers. Twelve are considered here :

- Introduce technological innovations where established teaching patterns do not currently exist, e.g. pre-school education, education of the handicapped, in rural areas lacking educational facilities, educational broadcasting, the open university concept, the high school completion course via correspondence, dial access to library collections and the like.
- Introduce curriculum packages in modular form so that sequences shorter than a "total course" can be used ; incorporate the instructions to the teacher as a part of the package ; allow certain options and adaptations to be made by the classroom teacher.
- Find ways to make more planning time available to teachers through team teaching, use of teacher aids, etc.
- Make the new teaching materials available directly to the student, that is, bypass the teacher. Students are more comfortable with the new technology than is the teacher. Where the materials have been available to the student, for example, via dial access in the library, students have made great use of the materials.
- Secure appropriations at the national level for investment in production and field testing of instructional packages with subsequent production and marketing through commercial channels.
- Require, when federal grants of "stimulus funds" are provided for innovative projects, that provision be made for the linking

of planning, teacher re-education, supplying of materials and equipment and evaluation.

- Encourage the establishment of educational institutions of differing types of philosophies and teaching methodology and give teachers, parents and students a choice of the type of institution. Spend the necessary funds on careful, long-term assessment and follow-up evaluation.
- Provide, at no expense to the teacher, professional development activities at the teachers' teaching site and at the time of need, and on problems identified by the teacher.
- Increase the ease of use and ease of access to teaching materials and equipment for the teacher and student.
- In the student teaching experience, provide opportunities for team teaching and mediated teaching, and attempt to instill acceptance of "visible teaching", self-criticism, and experimentation.
- Throughout the pre-service teacher education programme, introduce a more updated concept of teaching with special consideration of the unique role of "humans" in the teaching process.
- Encourage management scientists and operation analysts to make education one of their fields of study.

IV

CONCLUSION

The economics of education have already cast a long shadow on the future of school finance in the United States. Some basic constitutional questions are now in the courts challenging the fiscal basis of our present means of school support. It has been clear for some time that present tax structures are not adequate. It is also clear that a small but alarming number of our school districts are now facing bankruptcy, and that the cost of our present school system has been increasing over the past few decades at an exponential rate. As a matter of fact, the gross national product (GNP) has been projected together with the cost of public education. At present growth rates, it has been determined that by the year 2080, our total GNP will equal the total cost of public education. This statistical exercise has a meaning that must not be lost as we contemplate technology and the school, how they will inter-relate increasingly, and how all of this will, without question, change the role of the teacher.

In this paper, certainly, more questions have been raised than answers given but, as was stated in an introduction of a recent publication :

"...in the process of clarifying thinking on an issue, one often raises more questions than one answers. This can be annoying in a society that prides itself on demanding, and getting, answers to problems and then moving briskly on to new problems. And, as Socrates discovered, raising questions can be more than annoying, it can be downright dangerous."

It is certainly evident that the educational community is surrounded by a technologically-based society which is only now beginning to affect to any great extent the role of the teacher. Although change is very slow in education, it has been occurring

at an ever quickening pace. The education of the child today, particularly at the elementary level, is different both in content and methodology from the education received by his parents.

Within ten years, that is, in the early 1980s, we should be able to see very pronounced changes in the role of the teacher as more rapid applications of media and technology in education occur. The next twenty or perhaps thirty years should probably be looked at as a period of transition. Toffler in his book, Future Shock, speaks of this point :

"Mass education was the ingenious machine constructed by industrialism to produce the kind of adults it needed. The problem was inordinately complex. How to pre-adapt children for a new world - a world of repetitive indoor toil, smoke, noise machines, crowded living conditions, collective discipline, a world in which time was to be regulated not by the cycle of sun and moon, but by the factory whistle and the clock. The solution was an educational system that, in its very structure, simulated this new world... Our education systems had not yet fully adapted themselves to the industrial age when the need for a new revolution - the super-industrial revolution - burst upon them. And just as the progressives of yesterday were accused of 'prosentism', it is likely that the education reformers of tomorrow will be accused of 'futurism'. For we shall find that a truly super-industrial education is only possible if we once more shift our time-bias forward... Education must shift into the future tense." (42, pp. 343-344).

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V

THE ROLE OF THE TEACHER IN EDUCATIONAL INNOVATION IN SWEDEN

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SUMMARY OF KEY ISSUES

The first chapter starts with a definition of the concept innovation in education as representing a change in the direction towards a goal. It must not be limited to technical changes within an existing school structure. It embraces changes at all levels of education. Three such levels are described : Level 1 concerning the overall goals and the external structure of the school system, Level 2 concerning the internal structure of the school system in terms of timetables and contents of courses, and Level 3 concerning means and methods of teaching and evaluation. Innovations should be seen as the result of an interplay of two main groups of change agents : politicians and professional educators. The latter group comprises not only teachers but also school administrators and researchers in education.

The second chapter reviews the innovative activities in Swedish schools. Since 1950, when the national school reform started, such activities have been of six different kinds : 1. Experiments with the nine-year comprehensive school 1950-1962; 2. Experiments at senior schools 1951-1962; 3. The State innovative school in Linköping 1958-1968; 4. Experimental and demonstration schools attached to teacher training institutes from 1968; 5. Research and development projects since 1962 and 6. Local experimental educational areas since 1964.

The first of these six innovative activities was mainly an innovation at Level 1, dealing with the transition of the old system of parallel schools to a comprehensive system. This activity was of great significance. Later on, activities Nos. 5 and 6 were the most important.

Chapter three describes certain general trends of the innovative activities. Innovation is not restricted to the introduction of isolated means and methods but comprises a total curriculum development, where the traditional units are replaced as follows :

School	—————→	system of school units
Class	—————→	flexible grouping of pupils
Lesson	—————→	system of shorter time modules
Subject	—————→	study units
Teacher	—————→	teacher team
Textbook	—————→	educational materials system

Examples are given through diagrams of how the break of the traditional frame factors will result in a new type of teaching and learning.

Chapter four reviews some experiences of the innovative activities. On the whole these activities have resulted in a change in the role of the teacher, i.e. an increase in individualised teaching and guidance and a corresponding reduction in class teaching. The students have increased their independent studies in small group studies.

The initiatives for the changes of the external school structure (Level 1) have more often come from politicians than from the professional people. These have gradually taken over the initiative for the pedagogic innovations (Levels 2 and 3).

The innovative activities have usually not taken place in specially earmarked innovative schools. Instead they have been organised as innovative projects with a flexible use of the resources.

The secondary schoolteachers have usually hesitated to accept the new types of organisation, especially the heterogeneous grouping of students in grades 7-9. The teachers' resistance can, at least partly, be traced back to the institutionalised forms of teacher training and the traditional concepts of the teaching profession, i.e. in the sharp distinctions class teachers-subject teachers, academic-non-academic subjects, subject studies-professional training, etc. Changes which are experienced by teachers as lowering their status or reducing their feeling of freedom and security are usually opposed.

The overall experience is that if the innovative activities are to be successful, a continuous and intense drive of information and communication between different kinds of change agents is required.

I

THE TEACHER AS AN AGENT OF CHANGE

A. THE TERM INNOVATION

The term innovation as used in school and teaching is often synonymous with the term change. If this change is on a broad scale and affects an entire school system, one frequently speaks in terms of a reform. It would be incorrect however to refer to every change as an innovation. It must imply an improvement towards a predetermined objective. Innovation always presupposes one or more qualitative criteria.

The question then arises as to the nature of these criteria. Objectives, values and requirements vary from one individual to another, from one school to another and from one country to another. Despite these variations there are certain common features to be derived from a comparison of different school systems. Objective descriptions in different countries are in fact strikingly similar. The majority of them can be summarised in three propositions.

First education must provide the individual with optimum possibilities for the realization of his own inherent aptitudes. Secondly it must prepare him for his future career and for citizenship in general. Thirdly it must be organised in such a way as to provide students with equal opportunities for attaining these objectives, regardless of social, cultural, financial or geographical circumstance.

Thus an innovation is a change enhancing the ability of the school to realise any of these objectives. The third proposition, concerning equal opportunities for all students, can in fact be viewed as a definition of method as much as objective. This leaves as essential criteria the first two propositions, concerning individual and social objectives. Often the debate on educational objectives has revolved round the question as to whether these objectives are mutually reconcilable or not. It is not our task here

to consider this question ; instead we shall consider the role of teachers as change agents in the innovation process.

B. THREE LEVELS OF INNOVATION

As a rule innovation applies to improvements within the existing external structure of the school, but it can also imply or lead to changes in this external structure. In the second case, development is carried to the point where it implies a reform in the wider sense of the word. In this presentation we start from the hypothesis that genuine innovations will not come about unless the external structure is altered. Thus we use the word to apply to the development of the school in every respect.

If we allow the term innovation to cover the entire range of school functions from aim and content to forms of instruction and methods of working, we can distinguish three main levels :

Level 1 : The external structure of the school, above all in respect of the number of grades, stages and divisions into different courses of studies.

Level 2 : Timetables and syllabuses with aims and content of subjects or groups of subjects.

Level 3 : The teacher's instructional methods, the pupils' way of working, educational materials, study material and forms of evaluation.

Discussions and work on innovations in education in recent years have normally dealt with Levels 2 and 3. By means of research and development studies attempts have been made to improve the teaching of mathematics, science, social studies, etc. Aims and objectives have been developed and formulated, as have methods and the control of results for limited parts of the instruction. On the other hand only sporadic attempts have been made within the compass of research and development to create new types of schools and new relationships between different grades of schools. The latter has been regarded as essentially a matter of educational policy and therefore hardly the concern of teachers, administrators and research workers.

School has long been regarded as a community on its own, a state within the state with its own rules. This is no longer true. School is now looked upon as forming part of the community as a whole, an open system, in which the objectives and forms of work

of the community are reflected in those of the school, that is to say in educational innovations. This means that innovations must be designed and executed by school politicians just as much as by teachers, school administrators and research workers. The three last-named can be assigned to a group which we have called "professionals" for the sake of simplicity.

The proportions between the groups "politicians" and "professionals" vary within the three above-mentioned levels in accordance with the following diagram :

Level 1	Level 2	Level 3
P o l i t i c i a n s		
P r o f e s s i o n a l s		

The part played by educational politicians is greatest when it is a matter of determining the external structure of the school, that is to say at Level 1. At Level 2, which mainly deals with the timetables and syllabuses of the school, the politicians surrender much of their powers of decision to the professional group. The latter will take over still more at Level 3, which is chiefly concerned with materials and teaching methods. A movement from Level 1 via Level 2 to Level 3 implies an increasing degree of detail and formulation of aims and materials. The increased specification of goals allows increased scope for professional freedom and at the same time reduced involvement of politicians.

It must also be understood that both categories participate in educational change at all three levels, even if the proportions vary in respect of responsibility and effort.

A primary generalisation of the above is that, to be effective, innovations must not be limited to Level 3 or even to Levels 2-3. They must apply to all three levels.

A second generalisation is that innovations at one level affect the other levels. Every form of change contains both political as well as professional-educational implications.

A third generalisation and a result of the two mentioned above is that every type of innovation demands co-operation between politicians and professionals. If innovations are left entirely in the hands of the second group with teachers playing a dominant role, its members must realise their political role also.

C. THE CHANGING ROLE OF THE TEACHER

These three generalisations are supremely important when considering the teacher's role as an agent of change. They provide the starting point for our continued discussion of the role of the teacher in innovative schools. There is bound to be an interplay between politics and innovation. Teachers are far from being the sole innovators. They are part of a larger group of professional executors together with school administrators and educational researchers, and the actions of this larger group must always be integrated in the broader field of school policy.

The question also arises at which of the above-mentioned three levels innovations are initiated and in what groups new developments originate. A change can begin at any of the three levels. It may begin as a change at Level 1, e.g. through an extension of the compulsory period of schooling. It may begin at Level 2, e.g. with the introduction of a new foreign language in the timetables and syllabuses. And it may occur at Level 3, e.g. in the form of new teaching materials or new evaluation instruments. In keeping however with the three generalisations mentioned above, every such innovation must spread to all three levels in order to produce a real change. Many attempts at innovation have foundered simply because they have been confined to only one or two of the above specified levels. The introduction of new kinds of pupil groupings, e.g. heterogeneous groups or groups of variable size (i.e. changes at Level 1) must be accompanied by new timetables (Level 2) and new teaching materials (Level 3) or they will come to an impasse. The introduction of new study kits (Level 3) presupposes and must lead to revised formulations of objectives (Levels 1 and 2) if a genuine change is to be brought about.

It is a mistake to limit the concept of innovation in school to technical novelties in the narrowest sense, e.g. the use of audiovisual equipment, computers, language laboratories in school. It is also incorrect to suppose that the introduction of these "innovations" is bound to change the role of the teacher. Innovation in the true sense entails a change affecting all stages of the teaching process, i.e. objectives, means, methods and results.

The following are some of the typical features of the pattern of post-war innovation in school :

- a) Attendance at the compulsory school has become longer. Since 1945 it has been extended two or three years in the whole of

western Europe, and in some countries it now embraces the whole of the lower secondary school phase.

- b) More and more young people are continuing their education after the compulsory school. This means not only that many more go on to gymnasium or high school but also that, side by side with these schools, new types of secondary school have been established.
- c) Division into streams comes later and is less pronounced than previously.
- d) More schools are of the comprehensive school type. Different lines of education - regardless of how pupils are differentiated - are organised within one and the same school or school organisation, which has increased the pupils' choices and facilitated change of courses.
- e) The basis for all education is wider, implying less specialisation in both the primary and the secondary school.
- f) More importance is attached to the methods and means by which learning is assumed to take place, with a consequently weaker stress on the formal disciplines.

Quite clearly the first four of these are innovations at Level 1. The fifth belongs to Level 2 and the sixth to Level 3.

Many innovations assume that older ways of looking at things and distinctions which still persist in the teacher's role and his conception of this role must be abandoned. The changes in the role imply that the teachers must accept the following principles :

- a) The students learn by active involvement and not by just being taught by a teacher. As long as a teacher imagines that he is "dealing out" knowledge to his student, he is missing the importance of varying learning situations.
- b) The teacher is not simply a communicator of knowledge and information, but is also partly responsible for his pupils' mental growth and development of attitudes. This involves more behavioural variables in the teacher role than teachers have been accustomed to earlier.
- c) The role of the teacher cannot be defined only by the teacher's subject as a scientific discipline. The task always refers to students, who are to learn and gain experience.
- d) The teacher's conception of his role has long been characterised by thinking in categories expressed in pairs, of the type education-training (Bildung-Ausbildung), academic-non-academic, theoretical subjects-practical subjects, bright

students-slow-learning students, etc., where the teachers have been able to reserve for themselves certain subjects and certain students. This way of looking at things is becoming increasingly incompatible with the aims of the school.

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II

INNOVATIVE SCHOOLS IN SWEDEN

Educational innovations are thus correlated with changes in the role of the teacher. At the same time as the changing role of the teacher can in some cases be regarded as the result of the innovations, in other connections it is the innovations that result from changes in the role of the teacher. We shall for the moment refrain from discussing this interplay, i.e. the prime cause of innovations. Instead we shall review some examples of innovative activity in Swedish schools.

A. INNOVATIVE SCHOOLS 1950-1962

In 1950 the Swedish Riksdag passed a resolution of principle in favour of the introduction throughout the country of a completely new school system. Primary schools together with the various kinds of lower secondary schools and intermediate schools were to be amalgamated to form a new nine-year compulsory school. No immediate final decision was taken however concerning the detailed structure of this new school. Instead it was decided to begin with an experimental period of about ten years. This would allow time to study more closely the problems raised including those concerned with the differentiation and specialisation of pupils.

This decision had been preceded by extremely thorough investigations by government committees including not only school politicians but teachers, school administrators and researchers as well.

A large number of experimental schools were set up between 1950 and 1962, when the final resolution concerning the new school was adopted by the Riksdag. These schools can be regarded as innovative schools with the emphasis placed on experimentation with a new external organisational structure. The innovations belonged

in the first instance to what we have previously termed Level 1, i.e. they were concentrated on organisational experiments with a new, nine-year period of compulsory schooling divided into three-year levels of which the first two, comprising six years together, were of the primary school type and the third, grades 7-9, was a lower secondary school.

The speed with which these innovative schools were introduced can be seen from the following table :

<u>School year</u>	<u>Students</u>
1950-51	7 529
1951-52	14 635
1952-53	77 725
1953-54	35 784
1954-55	61 498
1955-56	84 941
1956-57	109 694
1957-58	143 370
1958-59	196 343
1959-60	268 940
1960-61	333 094
1961-62	436 595

By the end of the twelve-year experimental period, in 1962, half the municipalities in the country had adopted the nine-year undifferentiated system. This transition continued until 1968-69, when the last municipality adopted the new system. By the end of the school year 1971-72 all older forms of elementary schools, junior secondary schools, municipal girls' schools and other kinds of lower secondary schools will have been completely abolished and replaced by the new nine-year comprehensive school.

It would be hard to overstate the importance of the experimental schools. They provided a twelve-year period of adjustment during which the new school could be discussed and evaluated. Without this experimental activity there would never have been such a degree of unanimity surrounding the 1962 resolution in favour of the abolition of the parallel school system and the introduction of the comprehensive school throughout the country. The experimental schools reported their experiences to the Board of Education year by year and these experiences were made the subject of an annual discussion in the Riksdag. The experimental schools made it possible to achieve among other things the following :

- a) A lively and sustained educational debate between what we have previously termed politicians and professionals, including teachers.
- b) The combination of primary and secondary school teachers in single teams under the same leadership at school level with both vertical and longitudinal co-ordination of the educational programmes.
- c) A corresponding co-operation between different kinds of secondary school teachers, i.e. teachers of academic, vocational and other non-theoretical subjects.
- d) The introduction in the school as a whole of a guidance system of special guidance teachers together with free study options for the pupils.
- e) The abolition of the examination system in favour of a uniform system of continuous evaluation.
- f) The introduction of obligatory organised co-operation between teachers and other school officers in the form of subject conferences, class conferences, conferences for entire levels, etc.
- g) An intensification of the work, above all of teachers, for the development of objectives, means and methods for teaching, especially with a view to the heterogeneous structure of the new pupil groups.

The enumeration of novelties could continue with a long series of measures to improve the working conditions of the experimental schools, e.g. the creation of new school regions and the co-ordination of different schools and levels, measures to improve the basic and further training of teachers, the introduction of free educational materials, the school health service, school dental service, school meals, transport services for pupils, etc. One could also go on to mention a long series of secondary reforms affecting gymnasiums, vocational education, teacher-training and other branches of higher education, but we shall not be dealing here with these or other matters relating to the school reform in general.

One of the most important functions of the experimental schools was to provide a basis for the gradual revision of the teacher's role in line with the principles set out above. On the whole this revision proved more difficult to accomplish than had originally been anticipated. Individual teachers soon fell into their new role. Often it was this very minority that was engaged by the Board of Education to provide ideas and direct the

development of the internal work of the school. Taken as a group or collectively, however, teachers proved far less susceptible to influence, even though the vast majority of them showed a loyal acceptance of the new objectives.

One of the fundamental principles of the experimental schools was that teachers should be given a great deal of latitude for trying out new instruments and methods, the point being that much of the criticism levelled against the old school system had alleged that teachers were excessively tied down by rules. But the experience gained through the experimental schools of the 1950s showed fairly unequivocally that most teachers were oppressed by their new-found liberty, they were not equal to revising their working methods without assistance and instructions ; in their reports they were constantly calling for more explicit instructions and rules. Another clear lesson from this period was that the experimental schools were too scattered and isolated geographically. It was eventually found more effective to group them in large continuous areas where the teachers could help one another and distribute the extensive work of planning between efficiently functioning teams.

A third lesson concerned the teachers' contribution to different forms of organisational differentiation among pupils in the three senior grades of the new school, i.e. those corresponding to the former lower secondary schools. It had been hoped that the teachers would embark on experiments of various kinds to teach pupils aiming at higher studies together with others. In fact few experiments were conducted with undifferentiated classes of this kind. Teachers generally preferred to make classes as homogeneous as possible, to retain in fact the streaming of the old system. This was regarded by the school politicians as contradictory to the social objectives of the school reform. Most teachers eventually accepted the politicians' model of heterogeneous groups and loyally adopted it. But it should be noted that this innovation was due to the politicians rather than to the teachers.

B. INNOVATIVE ACTIVITIES AT SENIOR SCHOOLS

The organisational experimentation outlined above was accompanied during the period 1951-1962 by comprehensive educational experiments within the existing school system. These were conducted at the gymnasiums, at junior secondary schools of various kinds and at municipal girls' schools, i.e. lower secondary schools

belonging to the earlier school system which were due to be superseded by the new comprehensive school as a result of the school reform.

Every year during the 1950s the Board of Education invited the headteachers of the secondary schools within its jurisdiction to take part in experimental activities. A number of experimental projects were specified in these invitations. Schools enrolling in the experimental scheme also submitted proposals of their own. These proposals were co-ordinated and modified to a certain degree in consultation with the Board of Education. These innovative activities came to assume considerable proportions. During the first year alone, 165 of the 354 schools in the country applied for such innovative activities, of which 106 were supported by the Board of Education. An unflagging interest was maintained until the final resolution concerning the comprehensive school was adopted by the Riksdag in 1962, when the form of innovative activity was discontinued and succeeded by other forms of innovation.

It is impossible to specify how many different experiments were involved in these activities. The majority of them can be divided into three sectors :

- a) Organisational experiments, including experiments with correspondence junior secondary schools and gymnasiums as well as experiments concerning a special examination for junior secondary schools and municipal girls' schools.
- b) Experiments concerning teaching methods in literary and library studies, public speaking, mathematics in the Latin line, etc.
- c) Social activities in the form of class periods, school periods, freely selected work, etc.

Annual reports on their activities were sent by the innovative schools to the Board of Education, whose own report to the Ministry of Education was included in the government's annual budget proposals to the Riksdag concerning appropriations for continued experimental activities. During the period 1951-1962 the state contributed virtually S.Kr. 3 million to the extra expenditure entailed by innovative activities. Of this S.Kr., 500,000 took the form of a reduction in the number of periods taught by teachers involved in these activities.

The scope of special innovative activities at senior schools was as follows :

School year	1951-52	106	of the	354	schools in the country		
"	"	1952-53	109	"	"	365	"
"	"	1953-54	130	"	"	365	"
"	"	1954-55	164	"	"	368	"
"	"	1955-56	142	"	"	376	"
"	"	1956-57	114	"	"	388	"
"	"	1957-58	122	"	"	383	"
"	"	1958-59	55	"	"	387	"
"	"	1959-60	55	"	"	388	"
"	"	1960-61	55	"	"	388	"

The figures for the last three school years are not comparable with those for the preceding years because, starting in 1958-59, annual reports were no longer required from all innovative schools. There are no figures concerning the numbers of teachers involved. At the schools a local experimental directorate was set up consisting of an experiment leader and a committee of teachers of different subjects.

The Board of Education, which was responsible for the central management of these activities, gradually came to feel the need for a more definitive organisation together with a more specific experimental programme. Certain clearly defined and systematic experiments concerning the reform of the internal work of the gymnasium were therefore concentrated on seven secondary schools during the period 1958-1962. One of these schools was a private boarding school. The spontaneous experimentation of previous years continued side by side with these systematic experiments.

The innovative activities conducted at the special innovative schools were definitely of great importance to the development of their internal work, but the experiments were inhibited by the fact that these schools were forced throughout the entire period to abide by the original regulations concerning final examinations, a factor which, understandably enough, made teachers less disposed to take risks by embarking on advanced experiments. As a result, these experiments had less influence on school planning than did the organisational experimentation with the nine-year comprehensive school described in the previous section.

C. THE STATE INNOVATIVE SCHOOL AT LINKÖPING

Experiments with the nine-year comprehensive school were essentially concerned with the external organisational structure of

the school, more specifically with the feasibility of prolonged school attendance, a new division into levels, the co-ordination of primary and secondary education within a single organisation and a free choice of subjects and courses for the pupils. As has already been noted, no specific instructions were issued for experiments concerned with internal school work. From the very beginning of the experimental period more controlled and scientifically organised educational experiments were asked for in order to supplement the more general activities of the innovative schools. In 1958 a special state innovative school was set up at Linköping for this purpose.

This school was a nine-year undifferentiated comprehensive school of the kind described previously, but it was provided with extra research resources and was assigned clearly defined problems. Specially qualified educationalists were appointed to the staff. The school was given a qualified researcher (subsequently appointed professor of education) to lead the experiments, as well as a psychologist. A small number of research assistants were also appointed for particular purposes.

The school continued until 1968, when it ceased to exist as an independent institution and its activities were transferred to the new school of education set up that year at Linköping. Research projects conducted at the State Innovative School included experiments with different forms of differentiation in grades 7-9 of the new school. Another topic to which particular attention was paid in the experimental and innovative work of this school concerned the pupils' acquisition of reading ability. Particularly interesting with regard to the development of the teacher's role were the experiments conducted with advanced group work methods, in which the effects of this teaching were compared with the effects of conventional classroom instruction.

Most of the experiments conducted at the State Innovative School were connected with the initial testing of new methods and materials. These experiments were supplemented by field experiments for innovation purposes at a series of innovative schools outside the State Innovative School. A large number of scientific reports have been compiled concerning the activities of the School. Some of the experiments have been continued under the auspices of the new School of education at Linköping.

D. EXPERIMENTAL AND DEMONSTRATION SCHOOLS ATTACHED TO THE SCHOOLS OF EDUCATION

New institutes for teacher training, called schools of education, were set up during the 1950s and 1960s as a result of the school reforms at primary and secondary school level. These schools differ from earlier kinds of teacher training schools in that, among other changes, primary and secondary schoolteachers are trained within the same organisation. The schools of education are also responsible for the bulk of educational research in Sweden.

There are at present 15 schools of education. Each of these has what is termed an experimental and demonstration school which can be said to constitute a special form of innovative school. These experimental and demonstration schools differ from previous practice schools in that they do not form an independent school but consist of a collection of regular school classes within the municipal schools in the locality where the school of education is situated. The experimental and demonstration schools have been provided with specially qualified teachers who receive a special salary increment and have a reduced number of teaching periods. It is the task of these teachers, in close and direct collaboration with the pedagogics and methodology teachers of the school of education, to carry out special demonstrations and minor experiments, the object being to co-ordinate the teaching of practical and theoretical pedagogics. The experiments and demonstrations are primarily a part of the teacher training process. Trainee teachers play an active part in this work. Thus the experimental and demonstration school is not a separate school unit for innovative activities but should rather be seen as a flexible resource for purposes of innovation within the community school system. And this flexible resource is led by a special director of studies subordinate to the principal of the school of education.

The object of the experiments is to inculcate in trainee teachers a speculative and analytical attitude to educational problems. The demonstrations are concerned with limited problems of applied methodology, e.g. how to deal with the same section of a course when teaching younger and older pupils, respectively, pupils of superior or inferior ability, etc.

The following is a list of places with innovative schools of this kind together with the teacher categories served by them.

EXPERIMENTS AND DEMONSTRATIONS SPONSORED BY :

	Basic training of			Further training of teachers
	primary school teachers	secondary school teachers	remedial teachers	
Gothenburg	x	x	x	x
Linköping	x	x		x
Malmö	x	x	x	x
Stockholm	x	x	x	x
Umeå	x	x	x	x
Uppsala	x	x		x
Falun	x			
Gävle	x			
Härnösand	x			
Jönköping	x			
Kalmar	x			
Karlstad	x	x		
Kristianstad	x			
Luleå	x			
Vaxjö	x	x		

Starting from the academic year 1971-72, the training of pre-school and vocational teachers will be successively transferred from the earlier special training institutes to these schools of education, the assumption being that the innovative activities of the experimental and demonstration schools will then be expanded to include these sectors as well.

The first six schools of education listed above also include institutions for educational research. It is the duty of the professors and other teachers at these institutes to take part in experimental and demonstration activities. Altogether there are 756 teaching appointments for these activities in the fifteen towns and cities with schools of education, entailing an extra annual government expenditure of S.Kr. 14.4 million over and above the ordinary running costs.

E. RESEARCH AND DEVELOPMENT PROJECTS AT INSTITUTES OF EDUCATIONAL RESEARCH

When the experimental activities with the nine-year comprehensive school were wound up in 1962, appropriate forms had to be devised for continued innovative work. This was the origin of the educational research and development work centrally directed by the National Board of Education. This work has been initiated by the different bureaux of the Board and by the institutes of educational research at universities and schools of education. It takes the form of commissioned research, with budgets and time-tables drawn up by the National Board of Education and the relevant research institutions. The annual allocations for this research and development work have risen successively and amount to S.Kr. 13 million for 1971-72.

Most of this research and development work is done at the institutes of behavioural sciences at the schools of education and universities. The projects range from basic to applied research. Projects of particular interest for present purposes are concerned with the development of methods and materials systems, since these entail the engagement of a considerable number of schools and classes for controlled experiments and active development work. These schools and classes have played an important part in innovation activities and in the involvement of teachers. Both the experiments and the involvement are extremely time-consuming. The schools and classes involved are not to be regarded as permanent innovative schools but rather as innovative projects of a temporary and specific kind. In some of them the numbers of classes and teachers involved have been considerable.

Research projects in 1971-72 are distributed among the following institutes :

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Schools of Education

Gothenburg	6 projects
Linköping	5 "
Nalmö	15 "
Stockholm	7 "
Umeå	6 "
Uppsala	5 "

Universities

Gothenburg (education)	6 "
Lund (education)	2 "
Stockholm (education)	1 "
" (psychology)	1 "

Education Research Centre

Stockholm	1 "
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55 projects

These 55 projects represent only what is called research. To these can be added a large number of so-called development projects.

The 55 research projects have together a budget for 1971-72 of S.Kr. 11.5 million, according to the following classifications (figures in thousand S.Kr.)

Field of School Subject	
Irrespective of subject	6,839
Several Subjects	991
Foreign Languages (several)	75
English	658
German	491
Swedish	1,502
Social Studies	81
Mathematics	494
Vocational Instruction	329
Total	11,460

Field of Instruction	
Irrespective of stage	1,307
Several Stages	1,746
Nursery School	797
Comprehensive School (several stages)	1,420
Junior Stage	1,415
Intermediate Stage	345
Senior Stage	1,094
Upper Secondary School	394
Vocational Training	329
County College	-
Adult Education	417
Teacher Training	2,196
Total	11,460

Field of Investigation	
School development in the main : survey of trends and educational requirements	524
The school as an institution : school organisation	1,574
School staff (teachers, heads) Teaching	1,941
1. Aims	740
2. Methods	3,199
3. Aids	1,687
4. Assessment	620
Development and Adjustment of the Individual	1,175
Total	11,460

To these 11.5 million should be added a sum of 1.7 million for overall planning and information for the research projects in total, which gives a sum of 13.2 million. If the development projects are included, the sum ends at 20.4 million for the fiscal year 1971-72.

No real difficulties have been encountered in recruiting teachers and headteachers for innovations of this kind. On the contrary, teachers have found continuous contacts with the scientific institutions highly stimulating. Certain projects, e.g. the IMU mathematics project, have assumed such proportions that special itinerant advisers have been appointed to serve them.

It should be pointed out here that the development of teaching materials and materials systems is initiated by others besides the National Board of Education and the educational research institutes. Publishers and other educational suppliers have long been accustomed to engaging schools and individual teachers to test materials. Testing of this kind has now been subjected to restrictions drawn up by the National Board of Education in consultation with the educational suppliers themselves.

All these activities are now so widespread that schools and teachers all over the country are involved in various kinds of innovative work, still however without any schools being specially earmarked as innovative schools.

The development of teaching materials and materials systems is sometimes led directly by the National Board of Education with special project leaders appointed for the purpose. This has been the case especially with regard to deficiency sectors such as adult education, the teaching of the handicapped and slow learners and vocational training. In many cases the problems involved have proved different from what was originally supposed. Adult education, special instruction, etc., are often hampered, not mainly by lack of teaching materials but rather by the lack of programmes for different groups regarding the use of existing teaching materials. The development of teachers' handbooks, study programmes for students, diagnostic methods, evaluation functions and feedback functions have proved to be more urgently necessary than the production of teaching materials as such. A considerable number of schools and teachers have been involved in special development and innovation projects to remedy these deficiencies.

Whenever problems and tasks have been carefully discussed, teachers have practically always shown a great deal of interest in and devoted a great deal of work to this innovating work. Experience has shown, however, that innovative work soon dies out unless teachers are continually stimulated by the project leaders or by the field and local development work.

The development of teaching materials or of method and materials systems is only one of many sectors of research and development work in schools. Other experiments are concerned with new

forms of planning and co-operation between teachers and pupils in school, while others again are concerned with testing new curricular guidelines. We shall be returning in due course to consider parts of this innovative work.

F. EXPERIMENTAL EDUCATIONAL AREAS

We have already noted that the educational research and development work centrally administered by the National Board of Education can be seen as a direct continuation of the various forms of innovative activity from the experimental period 1950-1962. Most of this development work was delegated to the educational research institutes of universities and schools of education. Another form of development work, also a legacy from the 1950-1962 experimental period, is represented by the experimental educational areas. At the same time as these areas have been centrally initiated by the National Board of Education, the direct responsibility for their activities has always rested with individual municipalities and schools or groups of municipalities and schools. The following experimental educational areas have been started to date :

- Kalmar (1965)
1. The practice of communicative skills in comprehensive school and in the various forms of upper secondary school.
 2. Experiments with the applied training of skills in Swedish.
 3. Experiments with successive admissions and individualised instruction in vocational schools.
 4. Experiments with teaching materials.
 5. The conference as an educational forum.
- Karlstad (1965)
1. Nature studies at the lower level of comprehensive school.
 2. Laboratory work in physics.
 3. Practical vocational guidance.
 4. Closed circuit television in the teaching of civics.
 5. Material production and teacher collaboration in upper secondary school Swedish.
 6. Upper secondary school biology without textbooks.

7. Upper secondary school civics without home-work.

Malmö (1964)

1. Teaching with closed circuit television.
2. Variable group sizes and team instruction.
3. Reinforced individualisation in grades 7-9 of comprehensive school.
4. Vertical programme for study techniques.
5. Pupil participation in teaching.
6. New methods of pre-school training and lower level teaching.

Skellefteå (1965)

1. Experiments with increased pupil participation in comprehensive school.
2. Flexible pupil grouping.
3. Extended teaching periods.
4. Homework in school.
5. Teachers' assistants.
6. Revision of practical vocational guidance.

Sundsvall (1969)

1. Greater pupil participation in the planning of teaching.
2. Individualisation and laboratory work in upper secondary school.
3. Upper secondary school history without home-work.
4. Pedagogical-organisational experiments in the training of teachers' assistants.
5. Reconstruction of the building unit of the upper secondary school.

Uppsala (1969)

Experiments with improved pupil welfare and study environment through parent participation, observation programme regarding changes of course and disciplinary measures.

Vasterås (1971)

Experiments with advanced interdisciplinary planning and teaching.

The dates in brackets refer to the inauguration of the experimental areas. The enumeration of innovative activities in the right-hand column is not exhaustive. Moreover the experiments mentioned represent comprehensive programmes according to the 1969-70 reports rather than for individual projects. Thus the

Malmö project concerning variable group sizes and team instruction comprises no fewer than ten separate sub-projects.

The model for the experimental educational areas has been designed by the National Board of Education. These areas comprise one or more innovative schools with specially designed development programmes drawn up by the municipality concerned in close collaboration with the educational experts of the National Board of Education. In many cases the programmes have consisted of experiments with new working methods which have subsequently been introduced as central curricular guidelines. It is important to note that most ideas and suggestions have come from the municipalities and teachers themselves. The programme for the Malmö City experimental educational area can be taken as an example. According to the report on activities during 1959-70, the Malmö programme has aimed at :

- "Experiments in different forms of schools and at different levels to vary the size of pupil groupings and their working methods and in teamwork between teachers and co-operation between aim of the school to combine individualised instruction with social education.
- "The practical definition of the prerequisites of flexible grouping and team teaching as regards :
 - work organisation,
 - working methods,
 - teaching materials and their location,
 - premises,
 - personnel structure,
 - costs,
 - pupil participation in the planning of studies and contact with parents in matters connected with teaching.
- "Intensive experiments to test new teaching materials, new subject content, new methods and forms of co-operation in school for certain subjects related to the main project.
- "Efforts in collaboration with nursery school towards the development of new forms of training and teaching : pre-school - lower level.
- "The local organisation of such planned activities outside the experimental area as the National Board of Education and the Institute of Educational Psychology at the Malmö School of Education or some other institutes may wish to sponsor in schools run by the City of Malmö."

An educational experimental area receives state subsidies for five years towards the extra expenditure incurred through its development activities. This subsidy can amount to S.Kr. 100,000 annually but may not exceed S.Kr. 335,000 for the entire five-year period. It is conditional among other things on the municipality contributing at least the same amount of money to meet the extra expenditure. In fact the municipal subsidies have, almost without exception, been far larger than the state ones.

In other respects the educational experimental areas exist on the same financial terms as schools in general, though in some cases municipalities have paid salary increments to teachers for exceptionally burdensome planning work or extra work in adapting teaching materials to new activities. Normally however municipalities are not allowed to pay higher salaries than those applying to teachers in the country generally.

The experimental areas submit to the National Board of Education an annual report on their activities. A continual account is also given of the results of various sub-projects in the form of special reports. A summary account is compiled at the end of the fifth year. This does not necessarily imply the end of their innovative activities. The National Board of Education has always maintained that the five subsidy years are to be seen as the prelude to continued independent innovative activity. The first areas were started in 1964, so that their subsidy period ended in 1969. However both these and subsequent areas have stated categorically that they cannot continue without further state support. This support has been provided in a number of cases by giving the continued innovative activity the form of specialised research projects in collaboration with research institutes of education.

Each experimental educational area has a special managerial group including representatives of the school board, headteachers, teachers and parents. Nowadays the majority of managerial groups also include representatives of the County board of education and an institute of educational research. The last-mentioned of these has gradually proved both valuable and necessary, since scientific expertise has been found necessary for relevant evaluations of experiments; in order to make valid and meaningful evaluations, it has been found valuable for scientific expertise to participate from the very inception of the project in selecting problems, defining variables and collecting data. Consequently, educational research and practical school experiments, which were formerly regarded as two very different entities, have been brought very

close together. All the experimental educational areas are now anxious to secure the assistance of educational researchers. There is good reason to question whether these two kinds of innovative activity should really be kept apart. Educational research presupposes practical school experiments, while practical school experiments cannot lead to valid generalisations without the application of scientific method.

Managerial groups for innovative activities are generally assisted by a number of special experimental groups, most of them made up of teachers or teachers plus students.

It is in the nature of these activities for problems and difficulties to arise in the course of different experiments. So far however these have been more the exception than the rule. Taken as a whole the experimental areas have been overwhelmingly successful. This is attested not only by teachers and students but also by school authorities and parents. It has also been found that many problems can be avoided by devoting a generous amount of time to information and discussion from the commencement of activities and onwards. The start of each experimental area has been accompanied by detailed discussions at both central and local level between the school authorities and the teachers' union organisations. Hitherto these discussions have invariably resulted in unanimity concerning working conditions, even though the views of the different parties may have been diametrically opposed to begin with.

We shall return later on to consider the experiences gained from the activities of the experimental areas and other development work.

G. OTHER FORMS OF INNOVATIVE ACTIVITY

The innovative work described above forms part of the educational research and development work centrally administered by the National Board of Education. This is of course supplemented by spontaneous innovation work undertaken by individual teachers, groups of teachers and entire municipalities and which is not reported to the National Board or to other school authorities. It is therefore impossible to estimate the scope of spontaneous innovative work of this kind.

Innovative work also occurs in connection with government commissions and surveys carried out by the National Board of

Education at the instance of the Ministry of Education. A government committee known as ULA (Committee on the Working Conditions of Teachers) has spent six years investigating, among other things, the teachers' work situation. Careful time studies have been carried out in which the teachers' work input has been studied with regard to the amount of planning, preparation and complementary work associated with different subjects, teacher categories, etc. The results of this extensive study, which also include proposals for rationalizing teachers' work and making it more effective, have recently been presented. The teachers' work for a full year seems to vary both within and between different groups and teachers. The mean figures, however, were lower for teachers than for civil servants as a whole.

One survey carried out by the National Board of Education at the instance of the Ministry of Education and known as "SISK" (Co-operation in School) was aimed at devising forms of participation by pupils, caretakers and other school personnel in the various decision-making processes of school life. A large number of sub-projects have been carried out involving experiments of this kind. A number of investigations of this problem are now also being undertaken by a new governmental ad hoc committee named SIA (Working conditions in School). This committee has received S.Kr. 1.6 million to run its research programme.

Another survey conducted by the National Board, known as the Credits Survey, has led to proposals for new forms of evaluation of school work and has also included experiments with aptitude tests for higher studies with restricted intake. The National Board of Education is also sponsoring continuous innovative work on standardized achievement tests and other evaluation instruments. In this work the Board is being assisted by some 150 teachers acting as test constructors.

The Swedish Radio Corporation has a special department for school radio programmes. This department co-operates continuously with the National Board of Education to investigate the needs for radio programmes and to co-ordinate these programmes with school curricula. Within its annual budget, which for 1970-71 was S.Kr. 20 million, the school radio department runs a research and development programme on how to combine different learning media. For instance, in social studies and Swedish in classes 7-9 there has been developed a complete system of radio programmes, textbooks, teacher manuals, student guidebooks, etc. All this has been tried out through a network of selected teachers and classes all over the country.

School television is just now in a state of rapid expansion. The education programmes are developed and administrated by a special state ad hoc committee, named TRU (Instruction through Television and Radio). Of its annual budget, which was S.Kr. 13 million for the year 1970-71, 2.7 million were used for experiments on school programmes with new media combinations, mainly for secondary academic and vocational education.

III

OPERATIONAL UNITS IN INNOVATION

Before going on to some of the principal results of the innovative work, described in the previous chapter and closely connected with changes in the traditional role of the teacher, we shall consider some of the essential questions of innovative activity. This activity proceeds in several hundred classes and involves several hundred teachers. On this scale it is bound to involve a very large number of organisational and methodological experiments. In this multiplicity of experiments one can, however, discern an unambiguous overall structure. Here we shall endeavour to bring out some of the underlying ideas of this new structure.

A. "SQUARES" IN EDUCATION

The entire "educational system" is constructed with its point of departure in a number of units from planning and administration. Most of these are regarded as obvious in their present form in the school of today. If we wish to develop the school and its curriculum, it is necessary, however, to call even the obvious in question. We shall now take a close look at some of the planning and working units which are looked upon as self-evident. These units are : (i) the school, (ii) the class, (iii) the lesson, (iv) the subject, (v) the teacher and (vi) the textbook. These units are the usual building blocks in the school. In their traditional form they function as solid blocks, which can certainly be rearranged but which nevertheless remain as square-shaped building blocks. Unless we change these squares, all we achieve might be an illusory innovation. In the real sense of the word, innovation implies that these units are consistently changed in accordance with the aims we set for the school. Let us take a closer look at these figures and see how they can be modified.

1) The School

"The school" is an ordinary organisation unit. It consists of a building or a complex of buildings with a teaching staff and students. The school is often defined in terms of a geographically limited area which it serves.

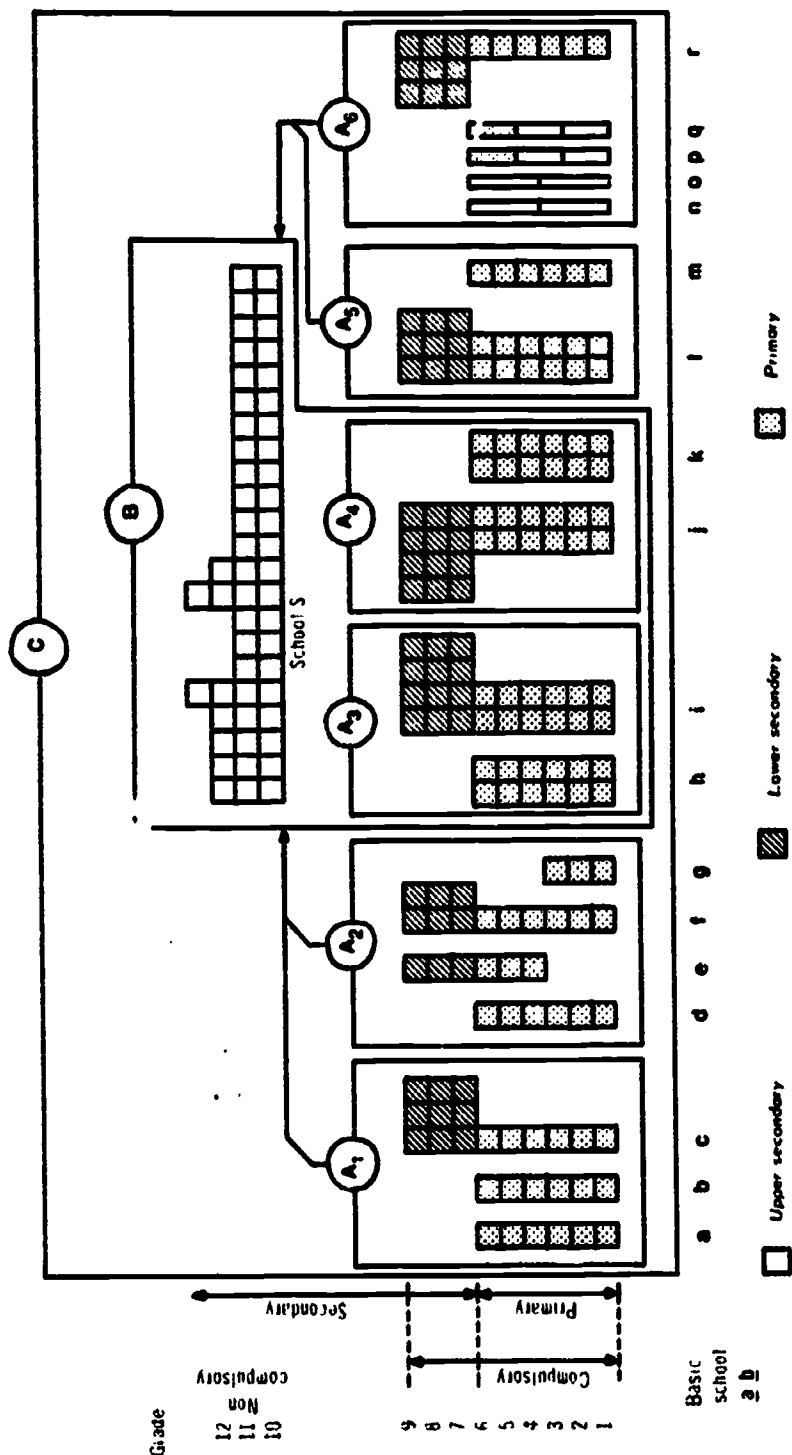
The school is required both to offer every individual the opportunity of personal self-realisation and also to satisfy the demand of the community for an all-round labour force. And this should be achieved in accordance with the principle of a free choice of subjects and of education.

Clearly it is not possible to offer the individual student all these things in every building or complex of buildings. Not even a school district or a local government area can always manage to do so. What is required here is a system of interdependent, smaller units. It must be possible to link lower school units up to higher school units to which the individual student has the right of admission, whether or not this higher unit is available in his own "school" or another "school". Thus every primary school student should know where he has his lower secondary school and, later on, his upper secondary school. On changing from one stage to another he might be required to change school buildings or even school area in the physical sense; yet he should still be regarded as belonging to the same school in a wider sense, that is to say to the same school system. "The school" in the form of a closed unit must therefore be replaced by a school system, in certain cases with intermunicipal collaboration and regional planning. One example of how this can be done is shown in the figure on the following page (example from Sweden).

Schools in the traditional sense, that is to say buildings or complexes of buildings, are in this figure marked a, b, c, etc. Thus a is a primary school, so is b, and c is a primary and lower secondary school with three parallels, that is to say it includes the entire compulsory school. But here a, b and c form one larger unit, marked A1 in the figure, where pupils in a and b know that after grade 6 they will proceed to c. Units of corresponding type are found in figures A2, A3, etc., each consisting of smaller units of various types.

Thus A6 represents a rural community, where schools a and g are of primary type, each having only two teachers for six classes. Schools p and q are so-called double-grade primary schools with two grades per class. Together with r these units form A6, which covers the entire compulsory school. Units A3 and A4 together

SCHOOL SYSTEM



form a complete upper secondary school B. But S is the upper secondary school also for A1, A2, A5 and A6. Every pupil in the large region, referred to as C in the figure, thus knows from the beginning where he will later on be able to find all the different educational options. The school S is thus his upper secondary school, regardless of in which one of the smaller school districts he starts his education. The school system can be further expanded ; for highly specialised lines in the upper secondary school, e.g. certain uncommon vocational educational lines, still larger regional units can be formed, made up of two or more upper secondary schools.

If the aim is so formulated that the individual student may choose freely between various educational alternatives and that this choice shall not be legally binding as regards his future studies, it is necessary from the beginning not to force students to choose between different schools and instead to offer various choices within one school system. Curriculum development cannot be operated independently of the relations between school units of different levels. Curriculum development must be concentrated either on the school as a closed unit or else on a school system, and it is essential to make this clear from the beginning.

ii) The Class

Perhaps the most strongly established of the "squares" in the planning and administrative system of the school is the class. . Historically the class came into existence as a unit adapted for instruction by a single teacher.

The class of today often constitutes an obstacle to curriculum development in modern terms. The class can and should be broken up and replaced by a more flexible grouping of students. Among others, the following aims can be better served by a flexible student grouping rather than by a closed grouping in a class :

- a) The individual student will be included in several groups, meet more people, learn to understand and work with them,
- b) Because the groups vary as regards composition, the student will acquire a better understanding of different people's aims and values, their conditions and circumstances,
- c) Collaboration in different groups results in an improved ability to adapt to various demands and situations and thereby in an improved ability to contribute to and collaborate with the community.

iii) The Lesson

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The traditional lesson lasting 40-50 minutes is the third in the series of established squares in the planning and administration of the school. Certain assignments require longer working periods, others shorter. Students at various age and maturity levels need different intervals of time. Similarly subjects calling for skill and proficiency may demand different units of time from those needed in general subjects.

Other modules than the traditional lesson have been found to result in increased flexibility in time consumption, e.g. 20 minute modules. These can provide working periods of 20, 40, 60 or 80 minutes, between which can be sandwiched intervals of 20 or 40 minutes. Experience of experiments with this more flexible use of time has conclusively shown that it is possible to do away with the conventional lesson-and-break pattern and obtain instead a working school where no bells ring.

The advantages, already hinted at, are, among others, that the following aims are more easily attained :

- a) Students and teachers can plan, start and complete their work better and thereby obtain increased continuity in their work.
- b) This results in improved motivation, greater responsibility and the encouragement of initiative and creativity.

iv) The Subject

The traditional division into subjects, based on Aristotle's breakdown of philosophy some 2,300 years ago into various sub-disciplines, is fourth in the series of outmoded building blocks. Nowadays the material to be learned is often brought together in an entirely new way in accordance with the pupils' experiences, inclination of interest and maturity. Above all in general subjects the old division into research disciplines is sometimes lacking in meaning. School programmes should be transdisciplinary. Such programmes are intended to serve, among others, the following aims :

- a) The students learn how to define their problems and assignments more clearly. The study programmes instil a problem-solving attitude and give practice in scientific method.
- b) The students are given opportunities of choosing their own working method, aids and manner of evaluation.
- c) This increases the possibilities of the students acquiring

knowledge on a higher cognitive level than that of simply absorbing facts.

v) The Teacher

The fifth "square" stands for the teacher (if the expression may be permitted) in his guise as the solitary and isolated professionalist. The teacher plans, implements and evaluates his and his students' work together with colleagues, students and other members of the school staff. The teaching profession in the older sense, where only the teacher mastered the matter to be taught and the methods to be used, defined his role as fount of knowledge, as a substitute for the book. This must be replaced by another form of professionalism, in which planning and collaboration in groups in accordance with a new assumption of roles constitute the basic elements. The lonely teacher must be replaced by a team, in which teachers work together with assistants and technicians. The following advantages may be gained :

- a) Planning and the distribution of responsibility give a better balance to the content of the course and the forms of work.
- b) The individual teacher can concentrate to a greater extent on tasks in which he is proficient and interested, allowing other assignments to be taken over by other teachers.
- c) The teacher can in general abstain from routine tasks and unqualified work, which can be carried out as efficiently - and more cheaply - by assistants.
- d) A team of teachers possesses advantages in the field of pupil care because its members can follow the pupil in all his engagements. Like the individual teacher, the team can provide specialised instruction in subjects.
- e) The teacher team helps to bring different teacher categories closer to one another and thereby to make school attendance more coherent for the students.
- f) The teacher team brings about a differentiation in the teacher role and thereby leads to a new professionalism on a basis contrasting with the earlier concentration on subjects or stages.

vi) The Book

The purpose of the textbook is changed. No longer must it necessarily be identical to the syllabus. The textbook is one resource beside other resources for learning. The old idea that

there should be a specially designed textbook for each special course, intended for a group of pupils or an individual pupil, can no longer be maintained. Libraries and class collections of reference books, factual handbooks and other teaching materials will replace textbooks. In this situation it will be of importance to draw up study programmes and teachers' guides, with the aid of which students and teachers can work. Techniques must also be developed for the planning of instruction and studies.

The textbook will be replaced by a system of books, audio-visual aids, study programmes and guides for teachers, that is to say systems of learning materials. These systems can give substantial freedom of movement but they always require a co-ordination of materials and teacher resources. Among the advantages gained are :

- a) The use of books and educational materials as resources instead of rigid course requirements allows greater freedom in the planning of instruction and studies.
- b) It should result in reduced costs of materials, since the books used in accordance with this method need not be continuously adapted to the courses.
- c) The use of educational material in this way leads to an active and constructive search among the sources of knowledge and thereby makes possible a better organised learning process.

B. CHANGING THE FRAME FACTORS

Traditional teaching is based on the planning units described above, the squares. A rigid "square educational system" thus implies that instruction is given in ONE SCHOOL in ONE CLASS by ONE TEACHER in ONE SUBJECT with ONE BOOK during ONE LESSON.

A central idea of the Swedish innovation activities has been that these squares should be prised open with "educational crow-bars". Innovation thus must not be restricted to the introduction of isolated methods, means and equipments but comprise a total curriculum development according to a systems approach, where the "squares" are replaced as follows :

School	—————→	system of school units
Class	—————→	flexible grouping of pupils
Lesson	—————→	system of shorter time modules
Subject	—————→	study units
Teacher	—————→	teacher team
Textbook	—————→	educational materials system,

Innovation in great breadth is hardly feasible unless the frame factors are changed on the above lines. The safest way would probably be to change the forms of financial grants. The present system of the school class or the teacher as a unit for state grants inhibits a flexible use of resources and, consequently, an active curriculum development. State grants per pupil are a form more favourable to development. This grant per pupil would probably function with a system of various coefficients representing the grade of urbanisation and of diversification of study combinations. Innovation activities always have to take into account the use of the above-mentioned frame factors. Unless these are amended, it will scarcely be possible to speak of a true innovation.

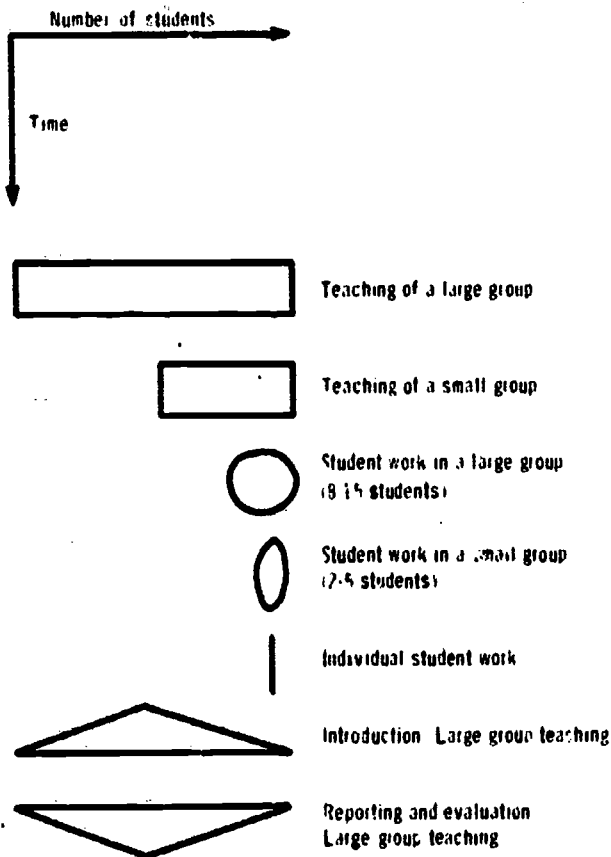
It is important that the revision of frame factors has its starting point in the aims of the school, above all the overriding aims of the part played by the school in developing the personality. It is also important that different levels in respect of curriculum development are co-ordinated, that is to say that the general aims of the school are brought into relation with both the structure of the school and the use of materials and methods.

C. SOME EXAMPLES

A curriculum development with free alterations of frame factors as described above also leads to other innovations. Teacher-pupil relations can be improved and so can those between teachers and administrators. In general all this should result in a more democratic school system.

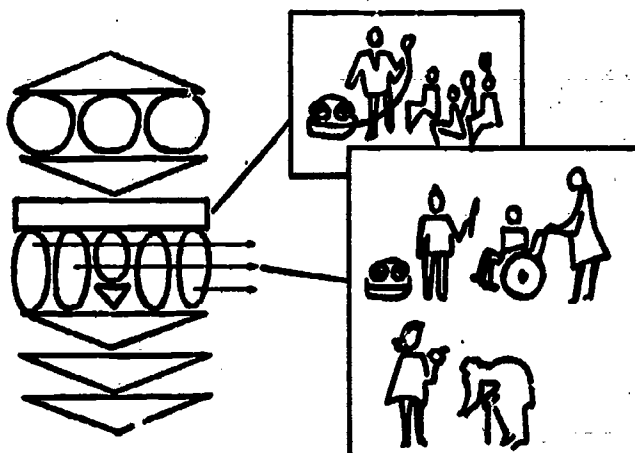
It is not possible in one diagram to illustrate changes in all the frame sectors. On page 312, examples are given of how three study units were handled in a curriculum development project for grade 7. These three units are : (a) people with different circumstances, (b) sound and (c) the wheel. None of these can be restricted to specific subjects such as physics, biology, social studies, etc. The structure in terms of grouping and time is

described graphically on the next page, where the following symbols are used,

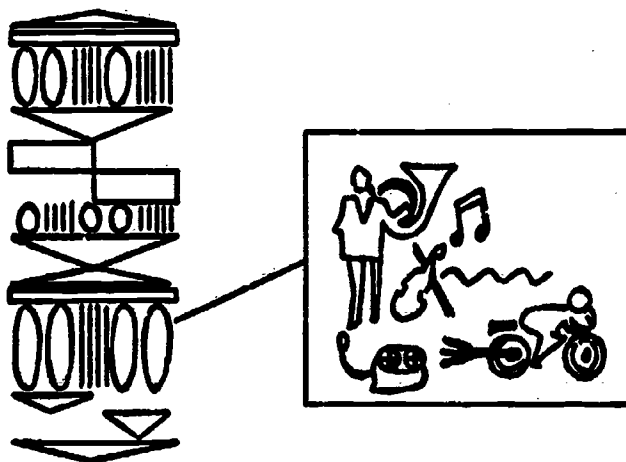


Other symbols can be used and other examples can be given. It is evident that this way of using time, content and resources has increased chances to improve teaching and learning in Swedish schools

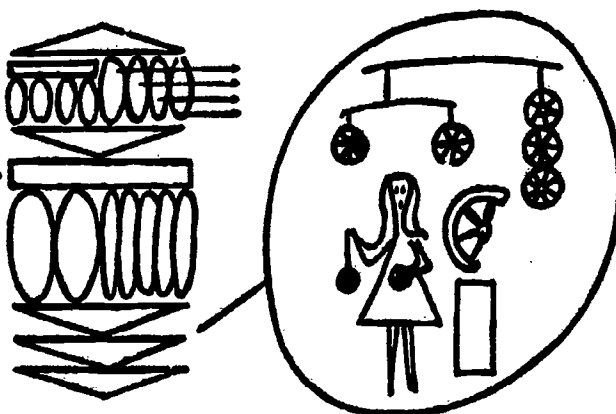
People in
different
circumstances



Sound



The wheel



IV

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EXPERIMENTS AND CONCLUSIONS

A. THE SCOPE AND NATURE OF INNOVATIVE ACTIVITY

Educational innovative work may be said to have begun in 1950 with the commencement of experimental activities with the new nine-year comprehensive school. Since then a large number of teachers and classes have participated. The total involved is probably a matter of thousands by now. In Chapter II we distinguished between different kinds of innovative activity as follows (dates refer to the commencement and conclusion of the various activities) :

- | | |
|---|-----------|
| 1. Experiments with the nine-year comprehensive school | 1950-1962 |
| 2. Special experimental activities at senior schools | 1951-1962 |
| 3. The State Innovative School at Linköping | 1958-1968 |
| 4. Innovative activities at the experimental and demonstration schools attached to schools of education | 1968 |
| 5. Innovative activities through research and development projects | 1962 |
| 6. Experimental educational areas | 1964 |

To this can be added the innovative activities conducted in the form of special projects by government committees and developments carried out by the Board of Education at the instance of the Ministry of Education. It will be seen that innovative activities 1-3 are now concluded, while Nos. 4-6 are still in progress.

The forms of innovation which have had the greatest influence on the development of the school system are without any doubt Nos. 1, 5 and 6. No. 1, i.e. experimental nine-year comprehensive schools, was most important in connection with the transition from the old parallel school system to a uniform system, i.e. an innovation at

what we have earlier I.A. termed Level 1. Nos. 5 and 6 constitute the immediate continuation of this innovative work, at which juncture the innovations also extend to Levels 2 and 3.

It is very hard to make a true estimation of how much these innovation activities cost. In the national budget for 1970-71 the following sums were given :

a) State support to research and development projects :

National Board of Education	S.Kr. 18.4 million
Other state funds	" 2.8 "

b) National Board of Education, internal innovative activities

" 5.0 "

c) State support to experimental and demonstration schools

" 13.4 "

S.Kr. 40.6 million

To this sum of approximately 40 million Swedish crowns should be added the support by municipalities, private research funds and publishers, for which no statistics are available.

We have here left aside all the innovative activities through in-service training of teachers. In 1970-71 the state expenditure for this was S.Kr. 33.5 million. This sum was distributed to different organisers of in-service training courses. For every teacher in the school system there is also organised a one-week course of in-service training during school time. The costs for this, which are not included in the S.Kr. 33.5 million are hard to estimate, but a sum of 60 or 70 million might be a good guess. This represents only the teachers' salaries, all other costs for the courses not being considered. This gives a total sum of some S.Kr. 100 million of the state budget, regardless of investment costs (corresponding to U.S.\$ 20 million), which for a small country like Sweden is considerable.

B. GENERAL CONCLUSIONS FROM THE INNOVATIVE ACTIVITIES

Three main conclusions can be drawn from Swedish experience concerning the initiative for innovative activities :

a) The initiative for organisational change (Level 1) has come more from school policy than from teachers and other

"professionals". This applies above all to what we have earlier called innovative activity No. 1, i.e. experiments with the nine-year comprehensive school.

- b) The initiative for innovation within the internal educational sector (Levels 2 and 3) has tended more and more to come from teachers and researchers. This applies above all to what we have termed innovation forms Nos. 2 and 6.
- c) Co-operation has been sustained between politicians and professionals and has on the whole functioned satisfactorily.

Another problem sector concerns the organisational form of innovative activities, i.e. the way in which innovative schools and innovative activities were planned. In this respect the following three conclusions can be added to those already stated :

- d) Innovative activities have not generally been attached to special innovative schools. Detailed discussions in Sweden concerning the form of innovative activity have led to the conclusion that no particular schools should be earmarked as innovative schools. The only specifically innovative school (See 3. Section A above), i.e. the State Innovative School at Linköping) was discontinued after ten years.
- e) Instead, innovative activities have been delineated by the allocation of special experimentation resources mainly by the Government through the National Board of Education. These resources have been earmarked for the definition of problems, materials and methods for innovative activities and not for the schools involved.
- f) Innovative activities have been organised in the form of projects of limited duration and content in collaboration with researchers, teachers, headteachers and, in certain cases, school politicians.

The Swedish school has been viewed by the school politicians primarily as a social reform and only in the second instance as an educational reform. As a result, evaluation of school reform has been mostly concerned with the question of whether or not the school districts concerned really accept the new forms of organisation and are willing to proceed further with them. It is fair to say that the Swedish experimental activities with the new nine-year school during the 1950s were popular among the local education authorities. Every year there was a long queue of municipalities wishing to adopt the new school system. This evaluation of school

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policy is as important as any other, and during the 1950s it was of far greater consequence than the evaluation made by the teachers during the same period of activities.

Towards the end of the 1960s, as the period of organisational experimentation drew to a close and the future emphasis came to rest on the pedagogical applications of the politically determined educational reforms, demands were made for an evaluation of the extent to which the reformed school had attained the objectives of educational policy laid down at the beginning of the experimental period. During the 1970s the work of innovation has therefore come to a very great extent to be concentrated on developing forms for the control of results and the feed-back of experiences. Closer examination of these evaluating activities would be beyond the scope of the present essay.

C. TEACHERS' ATTITUDES TO INNOVATIVE ACTIVITIES

In 1949 the majority of teachers were sceptical of the impending innovation. Primary school teachers and secondary school teachers of non-academic subjects favoured the proposed reform but secondary school teachers of academic subjects, i.e. the majority of teachers in junior secondary schools, gymnasiums and other forms of secondary education, had their doubts. In 1949 no fewer than 198 of 200 secondary school staffs rejected the proposal for unstreamed courses from grade 7 of the new school.

Later, when experiments with unstreamed teaching in grades 7 and 8 were begun, the same teachers remained sceptical of unstreamed classes. In 1955 the following distribution of teachers' views on the question of streaming in grades 7-9 was obtained in response to the question of which form of streaming they considered best.

1. Streaming within the class	3.6 % of the teachers
2. Streaming of pupils by ability into different parallel groups	61.6 % " " "
3. Streaming of pupils according to alternative 2 but only for certain subjects	14.1 % " " "
4. In some other way	1.8 % " " "
5. No answer	18.9 % " " "
	<hr/> 100.0 %

In its final resolution on the subject of streaming in 1962, the Riksdag adopted alternative 3, which was contrary to the wishes of the majority of teachers who had expressed an opinion. On the eve of the final decision concerning streaming in 1962, a petition signed by 11,000 secondary school teachers was submitted to the Minister of Education in 1961 calling for an organisational differentiation, i.e. a division of pupils into lines, starting in grade 7. Instead the Riksdag resolved that streaming into lines should not begin until grade 9.

Thus the discussion between politicians and professionals concerning the streaming issue ended in 1962 with a victory by the former. The professionals acquiesced however in the politically determined changes and proceeded to work out the pedagogical solutions. In these confrontations between politicians and teachers, only the teachers of academic subjects in secondary schools had been against the new order. Primary school teachers and secondary school teachers of non-academic subjects accepted the changes entailing a postponement of streaming.

In 1969, however, when the Riksdag, following proposals by the National Board of Education and in the light of experience of students' free options gained since the 1962 reform, resolved to abolish organisational streaming between different lines in grade 9 as well, large groups of comprehensive school teachers were sceptical. Their scepticism was aroused, not so much by the postponement of streaming, which was accepted by the majority of teachers, but rather by the forms and rate of the transition to a completely unstreamed nine-year comprehensive school. Teachers generally were uneasy about the transition from strictly subject-based teaching to teaching centred round study projects and fields of interest. They wanted a more gentle transition with more further training and information. Subject to certain delays, however, the new working methods have begun to be applied.

D. BREAKDOWN OF FRAME FACTORS IN TEACHING

How then have teachers and pupils reacted to the breakdown of the frame factors of teaching described above ? (III.B.) We quote here the results of certain interview studies from the experimental educational areas. The first report concerns changes in the teachers' working methods reported by the Skellefteå experimental area. The difference regarding forms of instruction between the innovation model and traditional instruction is shown by the

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Figure I

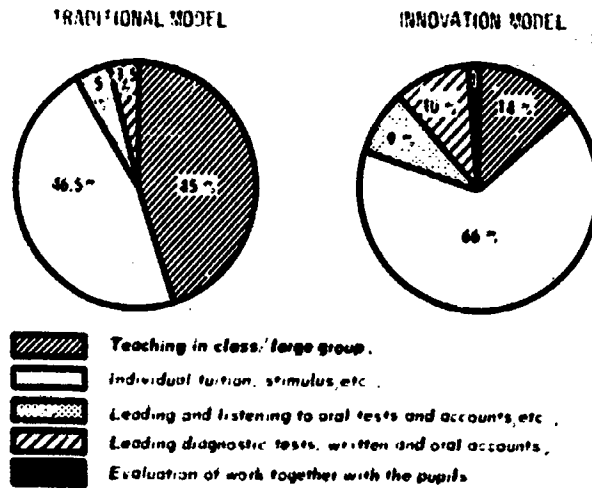


Figure II

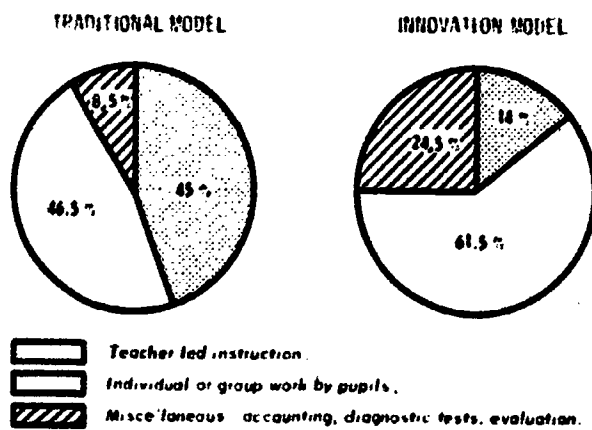


Figure III

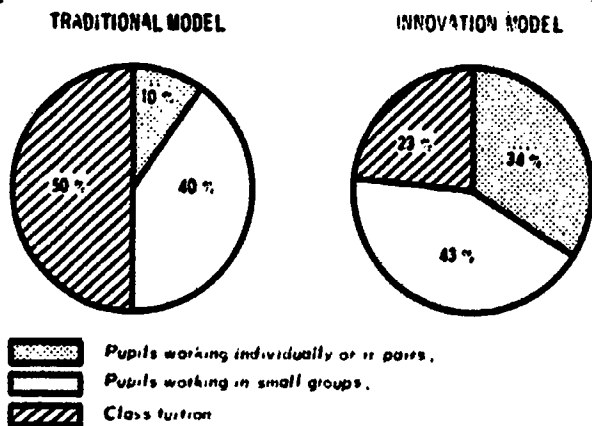


diagram (account) (Figure 1) from the Skellefteå experimental report for the school year 1969-70.

According to the same report, the pupils' working methods have changed (Figure 11).

According to the same report from the Skellefteå area, the breakdown of the frame factors has resulted in the changes of pupil groupings shown in Figure 111.

It seems obvious that the experiments conducted by the experimental areas, with the breakdown of frame factors as described in Chapter 111.B., have led to changes in the teachers' methods and in the pupils' work in accordance with the objectives laid down.

E. THE TEACHER'S ROLE IN EDUCATIONAL INNOVATION

A number of conclusions can be drawn from the developments previously described. First of all, politicians and professionals have both contributed to educational innovation. Although innovations on a macro-level, for example the extension of nation-wide compulsory schooling, the postponement of student streaming, the introduction of a guidance system, the broadening of the upper-secondary school system, etc., have had a predominantly political origin, it would be wrong to say that these innovations were introduced against the teachers' will. Throughout, teachers and other professional groups, such as school directors, headmasters, learning-aid specialists and research specialists in the behavioural sciences, worked on the ad hoc state committees and in curriculum planning. A continuous and lively discussion was carried on between the different groups. As a result negotiations made steady progress, especially between the Ministry of Education, the National Board of Education and the teacher unions. The following table briefly indicates whether different categories of teachers agreed (indicated by Yes) or disagreed (indicated by No) to the macro-structural changes.

Of course opinions varied very much within the different groups. When teachers through their unions said Yes, they usually also presented a long series of suggestions for modifying the innovations, sometimes making these conditions for their acceptance of the change.

As can be seen in the table, the teachers mostly accepted the macro-level changes (Level 1 in Chapter 1.B.) The four listed changes can be, and have also gradually been, further specified

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<div> <div></div> <div>MACRO-STRUCTURAL CHANGES</div> </div>	TYPES OF TEACHERS			
	1. Primary teachers	2. Secondary, academic teachers	3. Secondary, vocational teachers	4. Physical education, music and art teachers
I. Extension of compulsory education to the age of 16	Yes	Yes	Yes	Yes
II. Postponement of class differentiation to the age of 15	Yes	No	Yes	Yes
III. Introduction of a special system of guidance for students from the age 13	Yes	Yes	Yes	Yes
IV. Broadening of the upper secondary school system to include practically all youth 17-19 years of age	Yes	Yes	Yes	Yes

into hundreds of other changes. During the 1960s a long series of additional innovations also took place in teacher training, school community organisation, adult education, higher education, etc. It can be observed, however, that the secondary academic teachers disagreed on one point. Although this group of teachers represented only a minority of the total teacher population during the 1950s, their disagreement was of the greatest importance. In fact the so-called differentiation problem was the most discussed topic during the 1950s. Even after the parliamentary decision in 1962, this problem continued to be of major concern. The secondary academic teachers did not believe that students of different intelligence and study capacity could be taught together in heterogeneous

classes all the way up to the age of 15. They accepted the comprehensive school system but they proposed the streaming of students from grade 7. In 1962 Parliament decided however that streaming should not take place until grade 9, but that there should be alternative courses in mathematics and English in grade 7 and grade 8, and in both grades 7 and 8 students should also be able to choose between different combinations of subjects.

Secondary teachers argued that heterogeneous classes would have to be small. They contended that the educational results of a heterogeneous class would be poorer than the corresponding results of a homogeneous class, if the classes were of the same size. The findings of research did not however support the teachers' hypothesis, and homogeneity per se was not proven to be a condition for successful learning. In spite of these findings, which were discussed all the way up to Parliament, and in spite of a disquieting shortage of teachers, the ministry put a proposal before Parliament for reducing the size of classes in the new comprehensive schools. Parliament accepted this proposal, saying that no class should exceed 30 and that the classes could be split into smaller groups during a large number of lessons. This decision was mainly aimed at helping the teachers to handle the heterogeneous groups. It proved however to be rather expensive. The student-teacher ratio in grades 7 and upwards went down to 13:1. Other decisions to strengthen the secondary stage were also taken including, for instance, the introduction of systems for student guidance and for the special education of slow-learners and handicapped students.

It is worth noting that after these decisions had been taken the secondary teachers officially declared their loyalty to the politically enforced principle of heterogeneous grouping. The teaching of heterogeneous groups meant a great many changes in the teachers' roles. They had to drop the system of class repeating which had been prevalent in the junior secondary schools. They had to teach foreign languages to all students and not just to the "academic" students. A new system of in-service teacher training was built up from 1962. A broad programme for the development of means and media for individualized instruction was started and educational research was encouraged (see preceding paragraphs). These innovative activities are mainly change: at a micro-level (in Chapter 1.8, called Level 3) where the professional groups - including teachers - play the major part. Yet priorities in the different areas of educational research and development are

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ultimately decided on at the political level. The division of innovators into two groups, politicians and professionals, usually gives no trouble at the micro-level. Here, by far the greater number of innovations originates from the professional group. A somewhat different type of division, however, is now seeming to cause more of a problem. The professional group itself seems to be split into two. Research and development people, administrators (especially in central administration) and a group of innovative-minded teachers form one group, and the majority of teachers at the "grassroot" level form another group. The second group, which includes all categories of teachers, primary as well as secondary, vocational as well as academic, has begun to complain about the high speed of change and innovation. It is interesting to note that these teachers accept the general goals of the new educational system, but that they ask for more information, more in-service training and greater help with their work.

F. INSTITUTIONAL OBSTACLES TO INNOVATION

Innovative activities are constantly encountering a series of obstacles. We have already referred to the attitudes of the individual teacher concerning the teaching of heterogeneous pupil groups. But the obstacles to educational innovations are not only to be found in the attitudes of the individual teacher to organisational changes in school. To a very large extent they are to be found in the institutional forms followed by the teaching profession and teacher training. Such institutionalised obstacles to innovations include, for example :

- a) A clearly marked division of teachers into class-teachers and subject-teachers, where - in most European countries at least - the former category of teachers starts training from a lower initial level than the latter, and where training takes place in obviously different intellectual climates. In respect of conditions of appointment, work and salaries, the two categories are usually clearly separated.
- b) There is a similar clear division of the latter group, subject-teachers, according to "academic" and "non-academic" subjects. In some countries, those teaching "non-academic" subjects are not even reckoned as teachers.
- c) A distinct division of the teaching function into a subject section and a teaching section is found in some systems, often

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due to the fact that subject studies and professional teacher training have been kept quite separate.

Innovations in education must always be related to how the teacher experiences his own role. His experiences may refer to :

- the status and prestige of the teacher role ;
- the possibilities of advancement in the teacher's role ;
- feeling of freedom in the profession ;
- feeling of security in the profession ;
- identification with role as teacher.

A change in the teacher role will be made more difficult if the teacher experiences this change as a lowering of his status. The same is true of the possibilities of advancement, feeling of freedom, feeling of security and identification with the role as teacher. If the teacher considers that the change of role is opposed to his interests in these respects, the change in the role may be very small or completely lacking. Instead, it will become an effective obstacle in the way of educational innovation of which the change of role was a part.

G. CONCLUSIONS

The aim of the research and innovation activities in Swedish schools can be said to build into the school system a mechanism of self-renewal. This objective has been only partially achieved. Work is continuing unabated for a higher degree of objective attainment.

The first conclusion to be drawn from innovative activity in Swedish schools since 1950 is that, although it is highly dependent on the needs, aspirations and general educational attitudes of the teachers, the teachers are by no means alone in determining the nature, purpose and scope of innovative activities. Co-operation is always needed between politicians and professionals. Among the latter, school administrators and educational researchers wield influence side by side with the teachers. The success of innovative work is dependent on the efficacy of the co-operation thus needed between school politicians and professionals.

The future shape of innovative work in Sweden will be conditioned above all by three factors :

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- a) The development of an efficient system for the feed-back of experiences from the different forms on innovative work so as to guarantee a constant renewal of activities in keeping with current requirements.
- b) The development of efficient forms of information and communication for the dissemination throughout the entire school system of the ideas and experiences gained from innovative activities.
- c) The encouragement of innovative work at grass-roots by individual teachers and groups of teachers with a view to establishing bilateral communications with regard to innovative work, i.e. an efficient transmission of information from professionalists to politicians as much as in the reverse direction.

These problems are far from being solved in Swedish schools, although a series of activities has been inaugurated to study them more closely and to formulate further proposals for their solution.

B. ATTITUDES TOWARDS INNOVATION
AND POLICY IMPLICATIONS

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VI

THE CAUSES OF THE RESISTANCE OF TEACHERS
TO INNOVATION

by

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Belgium

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SUMMARY OF KEY ISSUES

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In a general introduction the author draws a distinction between essential innovations which are inseparable from changes in the general objectives of education and contingent innovations, many of which are merely pseudo-innovations. The positive and negative aspects of resistance to innovation are then discussed.

In the first chapter it is pointed out that the rate of penetration of an innovation depends on the acuteness of the need felt by the community and on the subject of the innovation. Four extreme cases are presented in theoretical outline and then illustrated. Three stages in the educational process (choice of objectives ; action to achieve them ; evaluation) are considered. Finally, the discussion is continued on broader and more specific lines with reference to a number of particular cases, including changes in general objectives without the facilities for the new policy ; material innovation with no theoretical basis ; material innovation as mere window-dressing ; specific innovation.

The second chapter is devoted to an experimental demonstration of the weak influence of innovation on practical education.

In the general conclusions fifteen causes of resistance to innovation are listed.

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GENERAL INTRODUCTION : THE PRESENT PROBLEM

The problem of resistance to innovation, of which the relative failure of the results of educational research to permeate teaching practice is only one aspect, is often approached in an atmosphere of total ambiguity. The terms innovation and resistance are correspondingly vague.

In the main there are two conflicting conceptions of innovation. The first is logical and rational. It argues that any new procedure which is not in line with the objectives adopted is clearly harmful or at best doomed to failure. Although theoretically unassailable this conception is too rigid and disregards the fact that a process as culturally rich as education cannot be changed in one go or transformed overnight in obedience to a decision.

Moreover, a decision is itself the last stage of a long period of gestation which has almost always been preceded by accidental innovations. One day some new and apparently insignificant procedure makes the first breach in the dyke and followed by many others finally undermines the whole traditional edifice.

According to the second conception of innovation a far-reaching change in the objectives of education may therefore be brought about by the cumulative effects of unplanned and unorthodox innovations. Once the objectives have been changed all the existing innovations shape themselves into a structure and new ones emerge, but this time rationally.

In a word, a change of objectives, accepted by the community, is productive of specific innovations which make it possible to translate the objectives into reality but, conversely, specific innovations, for example electronic data processing, may help to precipitate a change in general objectives. Because automation requires more intelligence than muscular force a more effective use of intellectual potentialities has become one of the objectives of education.

Innovation may be defined as the introduction of something new, whose effects are still unknown, into an established system.

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A definition of this kind does not convey whether the new process is essential or accidental. The switch from convergent to divergent teaching is a challenge to the very basis of educational thinking. On the other hand there is so little difference between the slides projected in a classroom and the traditional illustrations shown to pupils that the word "gadget" (which will be found in Robert's Dictionary of the French Language) can fairly be used to emphasize the superficial nature of this novelty. We propose to use the word gadget in the present paper to describe new devices which are not accompanied by any change in the teaching-learning process.

All innovations are part of a continuum ranging from philosophic revolution to mere gadgetry, while somewhere between them is a point where new working methods are grafted onto obsolete structures which like living organisms will secrete cultural antibodies.

The word resistance also calls for a number of comments. As used in the expression "resistance to innovation" it is generally pejorative. The resistance offered by educational institutions is felt to be a weakness which must be overcome and even an evil which must be fought. In the present outlook for our civilisation this feeling is partly justified, but only partly.

For resistance is also a sign of the capacity of an organism to remain alive and is a product of its strength and solidity. It is a proof of health. The idea of cultural health is perhaps not evoked often enough.

Education preserves and defends cultures. The collective or, more correctly, the modal determination which activates the members of a given community is always designed to keep the community alive. There is no example of a civilisation which deliberately sets out to destroy itself. Accordingly, education is always conservative, at least in its first stage, i.e. the early conditioning of young people and their initiation into the standards and knowledge of the culture. If there were an anarchical culture the educational system would have to teach anarchy as an act of conservation.

In their usual meaning education and innovation are therefore mutually exclusive. Educators always try to mould the educated on the lines of some implicit or explicit model to which they are attached. The educated are conducted towards an objective which the educators know or think they know. As innovation is tantamount to the introduction of uncertainty into the system it is felt to be a danger not only by schools which do not ultimately have much

to say in the discussion but by the community which produces the educational institution.

This point is not a new one. Considerable thinking was devoted to it by E. Durkheim and later by A. Clausse, I.N. Thut and many others. T. Husén expresses the situation very cogently :

"The more stable an institution is - and the educational system is certainly one of the most stable - and the more deeply it is imbedded in the community the more difficult it is to mobilize it in order to change that community." (1)

Initially, then, culture produces a type of education which is designed to conserve and which so conditions the educational institution that it subsequently refuses to evolve or is incapable of evolving pari passu with a changing culture.

Nevertheless, when the dynamics of a culture have become sufficiently powerful to set the educational system on a divergent course there is a backlash and the educational system becomes a centre of controversy.

1) A. Schuller, Ed., Lehrerrolle im Wandel (The Changing Role of the Teacher), Weinheim, J. Beltz Verlag, 1971, p. 49.

I

WHAT KIND OF INNOVATION?

A. THE RATE OF PENETRATION

Between 1930 and 1957, the United States Institute of Administrative Research conducted one hundred and fifty investigations into innovation in education. Paul Mort (1) has drawn the following conclusions from this impressive figure. (Although he does not say so, it is clear that his conclusions apply only to the industrialised countries which are undergoing far-reaching cultural changes).

In present circumstances it takes about half a century between the realisation of a need and the first steps (after the experimental stage) to introduce methods of general application to meet this need in practical teaching.

This represents the start of a slow permeation of day-to-day classroom practice. It will take fifteen years for 3 per cent of the schools in a system to adopt the innovation. Once this threshold is reached most of the teaching world begins to be convinced and during the ensuing 20 years the idea or the process spreads like wildfire. At the end of this period only a small minority of recalcitrants are left who will dwindle away in time. In other words, some 85 years pass between the maturing of a relevant and important idea and its actual adoption by teachers.

For example, the need to replace rigid classes by specific flexible and homogeneous groups was established by Thorndike and Woodworth about 1900 and explicitly submitted to the Belgian educational system by O. Decroly (2) in 1923. This system has been

- 1) Paul Mort, "Studies in Educational Innovations", in M.B. Miles Innovation in Education, New York, Teachers College, 1964. This collective publication contains a large number of case studies of innovation.
- 2) O. Decroly et R. Buyse, Les applications américaines de la psychologie à l'organisation humaine et à l'éducation (American applications of psychology to human organisation and education), Bruxelles, Lamertin, 1923, p. 45.

tentatively tried out by the reformed Belgian secondary school system since September 1971.

In the same connection an investigation carried out just before 1960 in Sweden relating to the teaching of the mother tongue in the senior classes of primary schools revealed that the curriculum plan adopted by the Government in 1919 had just begun to bear fruit (1).

In France, the country of Binet and Simon, the use of standardised achievement tests has not yet really penetrated into the primary and secondary systems.

It is therefore at first sight rather surprising to hear Bushnell state that in an emergency this long time-lag indicated by P. Mort could be reduced to one year. He gives as an example the special course which was devised in the United States at the end of the secondary education period to facilitate the preparation of airforce pilots at the beginning of the Second World War (2).

The apparent contradiction between this assertion and the findings of P. Mort should not be allowed to mislead us. Just as there is such a thing as an innovation continuum there are also very variable degrees of urgency which are felt by the community in a wide variety of ways.

"Subject" Continuum

A

Z

Change in educational thinking.	Introduction of a gadget. Perfectly defined.
---------------------------------	---

- . Very slow penetration.
- . Requires a profound change in personnel and in institutions.
- . Boundaries of the problem ill-defined.

"Urgency" Continuum

a

z

No urgency felt.	Vague realisation of a need for change.	Feeling of extreme urgency : danger in delay (e.g. war).
------------------	---	--

1) A. Schuller, *Lehrerrolle im Wandel* (The Changing Role of the Teacher), Weinheim, J. Beltz Verlag, 1971, p. 54.

2) M. Bushnell, "Now we are lagging only twenty years", in School Executive, 1957, pp. 77, 61-63.

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There are four possible extreme cases :

1. No need is felt to change educational thinking. Nothing happens except the occasional introduction of gadgets.
2. An urgent need is felt to change educational thinking. The community and events exercise strong pressure to this effect. The change in education will nevertheless be very slow. Indeed, it is difficult to translate the general problem into operational terms and even if temporary formulas are accepted, these are almost always rather blurred. Furthermore, people and institutions must change at this point. This kind of change process can last for centuries. This was the case as regards the introduction of realia into general secondary education.
3. A gadget is put on the market but no urgent necessity is felt. The rate of dissemination varies but is generally rather slow. For example the ball-point pen appeared in Europe in 1945 or 1946 and as soon as it was mass-produced it was rapidly adopted except in schools where it was not approved until about 15 years later.
4. A gadget exists or a simple, very precisely defined innovation is proposed and the community simultaneously feels a great need for it. The innovation penetrates very rapidly. Mr. Bushnell's example falls within this category : it is wartime and the problem is to give a series of lessons without devoting too much attention to fine points of methodology, etc. The message has to be transmitted.

B. THE THREE STAGES IN THE EDUCATIONAL PROCESS AND INNOVATION

Let us now revert to the problem and make a systematic analysis of the subjects of innovation.

The complete processes of education can be divided into three stages : the choice of general objectives, the application of the means to achieve these objectives and the evaluation of the output.

As we have already said, it may be taken as a principle that any innovation in treatment or evaluation which runs counter to the objectives will be rejected or sterilised.

This explains why an unprogressive social system often seeks to save its face as far as public opinion (national or international) is concerned by opening the door wide to all kinds of

novelties which do not involve any challenge to the prevailing social order.

a) The objectives

Objectives are a reflection of educational thinking. In general this is bound to be conditioned by the dominant culture and especially by the dominant social forces.

They will therefore change only in harmony with changes in civilisation and this explains the centuries of educational stagnation in the Western World and the progressive acceleration of events in history after 1789.

The first industrial revolution which involved the rise of the capitalist bourgeoisie was reflected in the rigid structure of the Herbartian educational psychology which was perfectly adapted to the social order which the ruling minority wished to perpetuate at all costs. A central authority carefully defined a body of knowledge which was then transmitted to children in such a way as to integrate them into the system.

Herbart's educational theory, the principles of which were formulated by 1806 (1) was systematised for school use by T. Ziller and subsequently by W. Rein and was used as the groundwork for an educational system which spread with increasing rapidity in the second half of the nineteenth century.

The Herbartian system which can be used in the service of any ideology still holds its own today.

Its very basis has however been challenged since the beginning of the 20th century by the entire functionalist movement which advocated a type of education centred not on the subject or the teacher but on the pupil. Claparède, Dewey, Decroly and many others won acceptance for this idea from the theoretical standpoint.

The functionalist innovation they preached was so important that it was regarded, justifiably, in our view, as the educational equivalent of the Copernican revolution.

But from the practical standpoint progress was so slow that if all the innovations introduced in the past 25 years as far as means and ends are concerned were to be suddenly abolished, it would hardly make any change to the teaching in most schools in Western Europe.

1) In Allgemeine Pädagogik (General Principles of Education).

However, it would be a mistake and an injustice to condemn the educational system and its planners because of the slowness of the trend. The problem as it now stands is extremely complex.

To set up an efficient and democratic educational system which is likely to ensure the survival and foster the maximum development of our civilisation, the whole edifice must be renovated, i.e. budgets, syllabuses, teaching methods, educational structures, teacher-training premises, equipment and enrolment standards, etc.

It is impossible to do everything at once, and what should be done is not always clear. For example, it is obvious that there must be far-reaching changes in teacher training but it is still impossible to find an objective way of measuring the efficiency of the teacher and thus assessing the effects of new teaching methods.

No one to our knowledge has yet worked out a PERT network to forecast how long the now essential readaptation of the educational system would take. This is a task which the most eminent educationists should attempt and if they succeeded their work would be of very great value.

Meanwhile, the task of renovation is proceeding but in a totally unco-ordinated manner, like a patchwork quilt, with all the attendant wastage of time and effort, not to speak of still-born innovations.

It would be naïve to imagine that the necessary task of transforming our educational system in the light of these new objectives of present day civilisation can be carried out with the order and precision of preparations for a lunar expedition. And yet considerable time would surely be gained by a systematic effort to state the problem clearly and above all to map out the critical phases in the renovation process.

b) The means

These are :

- The specific objectives embodied in educational curricula and syllabuses.
- Educational structures.
- Teaching methods.
- Teachers and particularly their type of training.
- Material facilities such as buildings and educational equipment ; teaching media and teaching techniques.
- Research on pupils and students.

- Finance.
- Research on theory, mainly psychological and pedagogical.

c) The evaluation, particularly through examinations

At first sight it may be estimated that the rate of change in the factors listed above varies considerably. The equipment of a class may be renewed practically overnight but even in revolutionary situations (the sequel of the French Revolution, the Russian Revolution, the change of regime in Cuba) the general objectives of education evolve very slowly. Nor must it be forgotten that a chosen policy cannot be put into effect if the means are lacking. This is the crucial problem of most of the countries which have recently won their independence.

Nevertheless, the facts reveal that :

- Simple innovations may be and often are as slow to gain ground as complex innovations.
- All environments seem to possess a uniform degree of elasticity : if they easily accept changes in one respect they react fairly similarly in another.

C. THE UNITY OF THE EDUCATIONAL PROCESS AND INNOVATION

To revert to our general contention : so long as the objectives, the means and the evaluation are not linked together into a single entity, isolated innovations will always be introduced on an unstable basis.

A brief description of a number of cases will serve either to illustrate our contention or to qualify it to a certain extent.

a) Change in general objectives without the facilities for a new policy

The principle of equality adopted by the French Revolution specifically involves not only equality of opportunity in respect of education but also in respect of intellectual development. Much ground has undoubtedly been covered in the 200 years since the Revolution but equality has not yet been achieved. Why ? First, because it is far from being desired by all. Secondly, neither the progress made in educational science nor the facilities available have yet made it possible to achieve full equality. To quote only one example : the early diagnosis of cognitive handicaps of socio-cultural origin, which is one of the keys to the democratisation of education, and their adequate treatment have hardly begun to attract serious attention.

b) Material innovation which is not integrated and has no theoretical basis

Experiments with the use of closed-circuit television for teacher-training will serve as an illustration. At first sight this innovation has spread fairly rapidly in a country such as Belgium, for example, particularly because of the small number of teacher-training colleges.

But the productivity of the new system is either very low or non-existent. The reason is that once the novelty of seeing oneself in action has worn off, and this itself is of doubtful value as it is not systematically exploited, teacher trainers are helpless because they have no rigorous, succinct system for the analysis of the interactions between teachers and pupils which could itself be validated by the objective measurement of educational efficiency or more accurately the efficiency of each particular teacher (and this, we must repeat, is something we are still practically incapable of doing).

Furthermore, a general theory of teaching to counterbalance the theory of learning is still lacking and this explains why the status quo is still maintained despite innovation.

c) Material innovation as mere window-dressing

In present circumstances school television often represents a marginal form of enrichment without any established significance and in the worst cases is responsible for a decline in teaching.

The marginal enrichment may be observed in several countries where broadcasts are arranged on a nation-wide basis and at certain states times so that all pupils receive "lessons" which are of "average" difficulty and are deemed to be suitable for all children who have reached a particular educational level. The unfunctional character of the system is too obvious to call for any comment.

Incidentally, we had an opportunity of observing a typical case of regression in teaching in the United States where an elementary physics class in which each pupil could have carried out experiments with simple equipment was replaced by a video-tape. Admittedly, the class were able to see a talented teacher in action but at the same time they all subsided into the kind of passive state which teachers have been struggling to overcome for many decades.

A similar criticism may be levelled at many audio-visual techniques which have spread rapidly under the combined influence of

manufacturers who are anxious to secure new markets and teachers who fondly imagine that they are entering the era of technological or electronic civilisation by surrounding themselves with such gadgets as slide projectors which are often little better than the large wall pictures so long used in classrooms.

Once again it is obvious that techniques and technology alone are not enough to change education. Television or programmed learning may serve any ideology, may be used for any kind of teaching.

d) Specific innovation

Specific innovation is a type of innovation which related to a particular subject or field and is therefore comparatively independent of any particular value orientation.

The switch from traditional to new mathematics comes within this category.

In cases of this kind, scientific advances make a whole body of knowledge completely obsolete. The specialists then reorganise the subject from top to bottom. The educational system is required to adapt itself generally, partly because it is an exigency of modern civilisation but more prosaically because the universities, on which a growing mass of students have set their sights, are basing their teaching on the new outlook.

Much may be learnt from Belgium where G. Papy has enthusiastically launched a veritable crusade for reform. Supported by a considerable section of the teaching profession, the Government and the Civil Service, Papy who was himself a Member of Parliament appears to have every chance of success.

And yet, once again, the evidence is inescapable : it seems as if the whole operation is likely to take just as long as P. Mort predicted.

The new mathematics has been developing since the beginning of the century and seems to have reached its climax about 1950.

This was the time when G. Papy began his struggle to reform the educational system and organised the first seminars for re-training mathematics teachers in secondary schools. By 1970 the new mathematics had won the day in the secondary system and in 1971 was introduced experimentally into the syllabus for primary schools.

But in 1971 :

- French speaking countries have still not done any longitudinal research into charting the mathematical future of

pupils who have been studying this new subject from the primary school level.

- The universities are still divided as to the advisability of making the reform general.
- It will take a generation before primary school teachers, thoroughly steeped in the new mathematics, become available.
- Methods for teaching the new mathematics do not appear to have been sufficiently run in as yet. For example, we note that at the beginning of the reformed Belgian secondary course practically no provision has been made for divergent thinking and this hardly seems likely to foster a creative outlook.

It will therefore probably take another twenty years before the system can be satisfactorily established.

Nevertheless, there are a number of specific innovations which go far less deep and are much more limited than the one we have just referred to. For example, Allen (1) shows that 90 per cent of senior high schools in the United States have developed driving courses in the past 18 years. Substantial support from public opinion, which is easy to mobilise on so practical a subject, and the absence of any political repercussions explain why this innovation has spread so rapidly. Moreover, it is exceedingly easy to train teachers for these courses. In contrast, Allen also notes that it has taken 60 years to give the study of the local environment its rightful place in the primary school course and this is also confirmed by our own observations. Once again, this is an innovation which not only implies a reversal of basic teaching attitudes but also makes it necessary to translate a general principle into every-day school life.

1) H.E. Allen, The Diffusion of Educational Practices in the School Systems of the Metropolitan School Study Council, New York, T.C., 1956, Dissertation quoted by Miles, p. 8.

II

EXPERIMENTS ILLUSTRATING THE WEAK INFLUENCE OF INNOVATION

If it is agreed that the innovation process is a coherent entity and in particular that facilities and techniques are subordinate to educational planning (which implies the explicit formulation of aims and theories) or to the attitudes of educationists which are deep rooted, irrational and therefore particularly crucial, there is much to be said for the protracted observation of day-to-day educational practice.

We now begin by briefly submitting the results of two detailed studies of school life carried out in Belgium and in Sweden, respectively.

A. AN EXAMPLE OF OBSERVATIONS MADE IN BELGIUM

In the past ten years the Laboratoire de Pédagogie expérimentale at the University of Liège has made about a hundred thousand analyses of verbal interaction between teachers and pupils in the classroom (1).

In all these observations an attempt has been made to report on aspects which seem essential in education in the light of our current knowledge of educational psychology.

The nine categories of the analyses may be justified in the following way.

1) G. De Landsheere et E. Bayer, Comment les maîtres enseignent, Bruxelles, ministère de l'Éducation nationale, 1969.

G. De Landsheere, "How Teachers Teach, Analysis of Verbal Interaction in the Classroom", in Classroom Interaction Newsletter, Philadelphia, 1971.

First, it would seem that the educational process is not possible without a minimum of organisation : if this is not achieved the democratic atmosphere desired will degenerate into anarchy while individual or group work will become impossible.

Furthermore, attention must be focused on two types of educational procedure which represent two poles of democratic education. The first is the initiation of pupils into the existing culture (values, ways of life, techniques, etc.) which calls for constraints or imposition. The second is the provision of opportunities for independence, i.e. freedom to act and think and freedom to create and criticise (a process which may be called "development").

The functions of facilitation and reinforcement must also be considered. We know, in particular, that without adequate reinforcement there can be no learning.

Lastly, as visual, auditive or audio-visual concretisation is one of the favourite fields for innovation, special notice has been taken of all action in this respect. In so doing we have consciously committed a methodological error as the concretisation category and the imposition and development categories are not mutually exclusive. But if we had acted otherwise the loss of information would have been too great.

The nine categories and some of the forty sub-categories which directly concern our purpose are as follows :

- Organisation.
- Imposition.
- Development of content.
- Personalisation
 - particularly : individualisation or semi-individualisation of education.
- Positive feedback : (1)
 - stereotyped
 - specific.

1) Feedback is the act by which the teacher informs the pupil of the quality of his performance. The content or the objective of instruction are the main points considered. Feedback is stereotyped when it is provided either in formulas such as "good", "right", etc. or by the mere repetition of the pupil's reply. Feedback is specific if the evaluation is accompanied by a justification.

- Negative feedback :
 - stereotyped
 - specific.
- Concretisation :
 - use of equipment (figurative, symbolic, construction or manipulation)
 - invitation to pupils to use an item of equipment
 - audio-visual techniques.
- Positive affective functions (1).
- Negative affective functions.

In a preliminary research assignment a sample of first-year primary school teachers was chosen at random from a Belgian town and its suburbs. The lessons given were consistent with the child's spontaneity of expression and activity under standardized experimental conditions (practically always above 90 conformity to the standards).

The percentage breakdown of 21,929 analysed examples of behaviour (50 lessons) was as follows :

Organisation	27.0%	Feedback +	11.4%
Imposition	34.5%	Feedback -	2.7%
Development	2.1%	Concretisation	13.3%
Personalisation	3.7%	Affective function +	1.4%
		Affective function -	3.8%

The Belgian primary school curriculum has been considered as one of the most progressive in the world since 1936. It advocates spontaneous expression, activity and free exploration and was accepted with enthusiasm by a high proportion of the teaching personnel. However, the figures clearly show that most teaching is teacher-centred. Even if only the most approximate figures are adopted the following solution is arrived at :

Organisation	27.0%
Imposition	34.5%
Concretisation by the teacher	9.6%
	<hr/> 71.1%

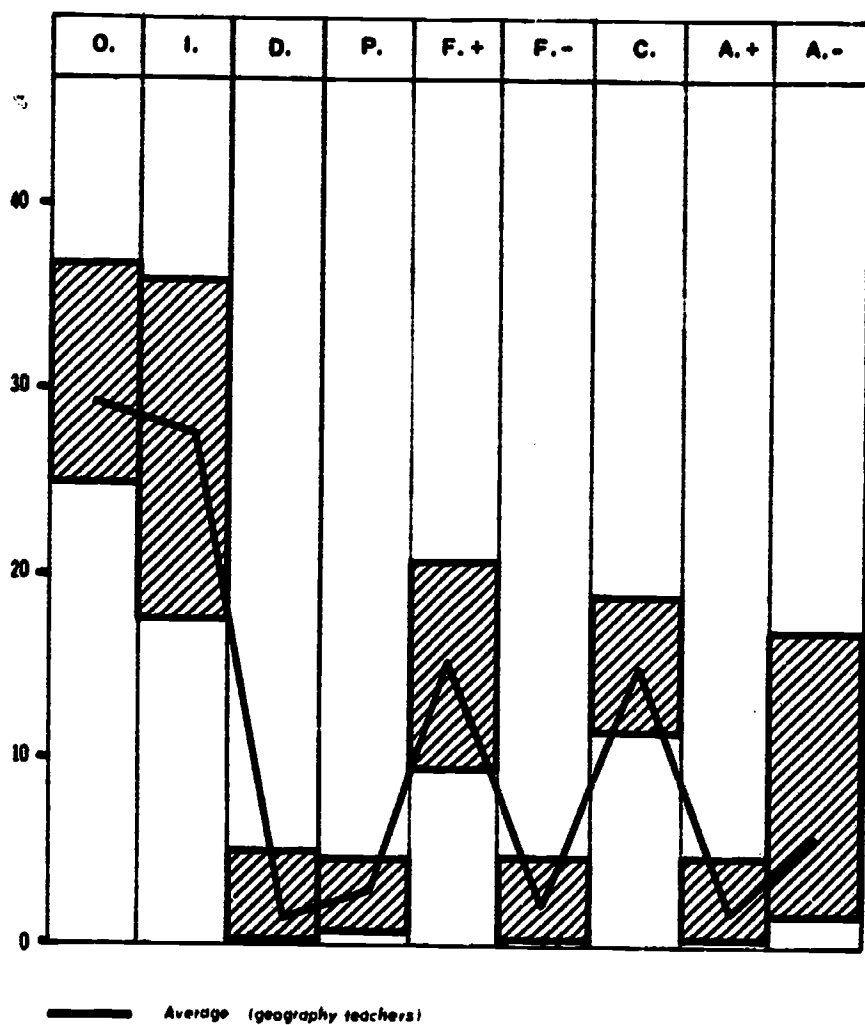
1) The affective "functions" cover assessments of pupil behaviour and are independent of any evaluation of the particular content of his replies (encourages, promises a reward, threatens, admonishes, etc.).

In only 225 cases was the pupil invited to say what he had observed or experienced outside the school.

No case of the utilisation of audio-visual techniques was observed.

Almost all positive feedbacks are stereotyped and therefore of low cognitive level. Only 8.2 per cent of all positive feedbacks are specific ; the figure is 27.7 per cent in the case of negative feedbacks.

In Junior Secondary schools an investigation of the same type (11,333 observations), this time relating to geography lessons, gave very similar results (cf. diagram below (1)).



1) G. Jacques, Université de Liège, mémoire de licence, unpublished, 1970.

Several other surveys carried out at other primary school levels and in other regions of the country confirm the above results.

It is therefore clear that teaching practice (whether based on general methodology or the use of modern technological resources) does not seem to have developed in relation to the change of objectives.

It must, however, be pointed out that this assessment is subjective for no criterion is available which makes it possible for example to determine what threshold of imposition must not be exceeded in a pupil-centred type of education.

Marie Hughes (University of Utah) has proposed the following criteria :

Control functions	20 to 40 %
Imposition functions	1 to 3 %
Development functions	20 to 40 %
Facilitation functions	5 to 15 %
Personal response functions	8 to 20 %
Positive affective functions	10 to 20 %
Negative affective functions	3 to 10 %

We have shown elsewhere the extent to which these figures are open to challenge not only because of the quality criteria adopted by the author but also owing to the serious imperfections in her system of categorization.

Roughly the same conclusions have been published by a considerable number of authors, particularly British and American, who have used a wide range of observation procedures and worked at all levels of the educational system.

To keep the present paper as concise as possible we propose to quote only one more example.

B. AN EXAMPLE OF OBSERVATIONS MADE IN SWEDEN

R. Stukat and R. Engström (1) devoted four hours to the observation of sixty-three teachers chosen at random from one thousand teachers at the Swedish Comprehensive School (from the first to the ninth year). They obtained the following invariable breakdown

1) R.G. Stukat and R. Engström, "T.V. Observation of Teacher Activities in the Classroom", in Pedagogisk Forskning, 1967, pp. 96-117.

in ex cathedra teaching :

- Actual teaching : introduces information, asks questions and fulfils feedback functions 77.5 %
- Attention to pupils and discipline 3.0 %
- Administration 21.0 %

The check list used gives details of the equipment ; the average lesson profile needs no comment.

C. A FURTHER EXAMPLE OF RESISTANCE TO INNOVATION

Another type of research (Laboratoire de pédagogie expérimentale de l'Université de Liège) enables resistance to innovation to be shown experimentally and will perhaps prove that the process is necessarily a comprehensive whole.

The best writers on this question unanimously agree that the reinforcement of adequate response is essential in the learning process. One of the aims of any innovator should therefore be to improve the quality of the feedbacks.

The experiment is conducted as follows (1) : the basic teaching profile is determined for a particular teacher, particularly his feedback profile. He is then given the theoretical information regarding the role and the nature of the feedback and the analysis process is explained to him. When the idea has been thoroughly assimilated the teacher is then invited to give lessons into which he introduces as much specific positive feedback as possible.

The results are as follows :

- a) There is no significant variation in the total number of feedbacks.
- b) The teacher may have increased the number of specific feedbacks and reduced his stereotyped feedbacks (repetition of the pupil's reply) to the same extent.
- c) However, the increase in specific feedbacks occurs mainly during the first 20 minutes of a lesson and this suggests two hypotheses :
 - 1) Complex problems likely to produce specific feedbacks are set to pupils in the first part of the lesson when essential ideas are introduced ; the second part of

1) Van Ceulebroek, Université de Liège, mémoire de licence, unpublished, 1970.

the lesson is probably reserved for convergent applications and systematisation which are less conducive to high-quality feedback.

ii) As soon as fatigue sets in the teacher reverts to his routine habits.

d) After a few experimental lessons the number of specific feedbacks begins to decline and there is a tendency to return to the pre-experimental situation.

Assumption (a) : The force of habit is considerable and a lengthy therapy is required to change a teacher's behaviour.

Assumption (b) : The method of increasing the number of specific feedbacks was superficial. Feedback behaviour cannot be isolated from general methodology. The whole teaching system must be changed (e.g. switch from teacher-centred to pupil-centred teaching) to effect a durable, functional change in feedback behaviour.

e) Incidentally, a negative correlation is observed between specific feedback and imposition functions whereas the relation is positive with development functions.

We feel that observations of this kind bring us nearer the heart of the innovation problem and highlight its complexity. Not only must teachers be trained but they must be induced to work at different cognitive levels and to adopt new attitudes.

D. ATTITUDE OF TEACHERS TOWARDS RESEARCH INTO INNOVATION

Even if we confine ourselves to a consideration of the source of innovation, problems of attitude will soon be found. An investigation by F. Hotyat seems significant in this respect (1).

As far as research into innovation is concerned, do teachers place more confidence in practical suggestions by valued colleagues, in an official statement of new principles, in the results of experiments or in a revision of the objectives of education and teaching (question 12) ?

1,357 teachers from all levels of education (except the universities) agreed to indicate the degree of efficiency they

1) F. Hotyat, "La sensibilité des maîtres à une réforme de l'enseignement" (The Sensitivity of teachers to educational reform) in Les sciences de l'éducation, 1967, No. 2, pp. 7-31.

AVERAGE LESSON PROFILE

Category	Number of observation periods in %							Category	Number of observation periods in %						
	10	20	30	40	50	60	70		10	20	30	40	50	60	70
<u>INSTRUCTION</u>							77.5	<u>USE OF MATERIAL</u>							48.0
1. oral information							32.5	1. blackboard							6.0
2. non-oral information							8.2	2. map							1.1
3. control question							18.8	3. plate							
4. listening, inspect							7.3	4. flannelgraph							
5. feedback to pupil							15.4	5. beads frame							
6. directions							12.2	6. film							
7. questions, non controlled							2.0	7. TV							
8. unspecified 1-7							17.1	8. slides							
9. other instr. act.							0.1	9. pictures							
<u>PUPIL CARE</u>							0.2	10. tape recorder							
1. share confidence							0.1	11. gramophone							
2. show sympathy							0.1	12. radio							
3. att. clothes, hygiene							0.1	13. objects							0.1
4. clear up matters								14. laboratory material							6.4
5. init. relax act.								15. drawing material							
6. other pupil care								16. organ							2.4
<u>DISCIPL. ACTIONS</u>							2.8	17. other material							4.2
1. corrective talk							0.2	1 - 17							17.8
3. name pupil							1.7	18. textbook							18.8
2. call for silence							0.7	19. reader							0.9
4. point at pupil								20. printed work material							2.9
5. scolding								21. sheet of papers							9.6
6. stamp on floor								<u>POSITION AND MOVEMENT</u>							
7. warn, threaten							0.1	1. sit in chair							41.7
8. pupil out of class								2. sit other part							32.3
9. black book								3. stand before class							
10. other disciplinary action							0.1	4. stand other part							8.3
<u>ADMINISTRATION</u>							21.1	5. walk before class							10.5
1. control presence							1.0	6. walk other part							8.3
2. directions, question							13.4	7. t. out of cl.-pupil in							1.3
3. plan trip							2.9	8. t. in cl.-pupil out							0.2
4. prepare aids							2.4	9. t. and pupil out of cl.							
5. distribute, collect material							2.7	<u>GROUP SIZE</u>							
6. cleaning up							1.3	1. one pupil							25.6
7. other administrative action							0.1	2. 2- $\frac{n}{2}$ pupils							20.7
<u>OTHER ACTIVITIES</u>							7.9	3. > $\frac{n}{2}$ pupils							70.0
1. supervise							4.4								
2. correct papers							0.3								
3. talk with visitors							0.2								
4. other verbal act							1.7								
5. other act							1.7								

attributed to the four methods of innovation suggested by the question:

	Percentages		
	Very effective	Average effectiveness	Little effectiveness
Practical suggestions by colleagues	76.0	19.4	4.6
New methodological principles	15.1	53.6	31.3
Results of research	32.4	47.3	20.3
Revision of objectives	50.6	34.6	15.8

Whether the teachers were men or women, old or young, university-trained or not, the suggestions of colleagues seemed by far the most effective. Teaching is thus still unwilling to emerge from the rule-of-thumb stage.

This lack of receptivity to outside influence is moreover confirmed by the distrust with which experimental research is regarded.

On the other hand it is comforting to note that teachers clearly feel the importance of revising objectives and the pointlessness of isolated methodological reforms.

We should like to conclude this brief factual survey with a few points about what we have elsewhere called the feeling of alienation among teachers. They have the increasing impression that they are strangers in the technological civilisation by which they are surrounded.

A large number of interviews have shown that many teachers would be only too glad to exercise their profession scientifically but feel incapable of doing so. This helplessness is due to the comparatively slight progress made by educational science and the quality of the experimental training given to teachers. Whereas doctors and engineers are trained at a level which enables them to understand and use the results of scientific research in their daily work as and when these become available, most teachers at all levels do not possess even the elementary knowledge of statistics which would enable them to glimpse, let alone understand, the significance of experimental research,

But research and researchers are playing an increasing part in the mythology of our civilisation. It is widely held that they are responsible for immense technical and technological progress and that they alone have a complete mastery of the methods and instruments by which the world can be controlled. The feeling that they are totally excluded from this intellectual world whereas they are responsible for training the men of the future induces in the best teachers, those who question their own qualifications, a feeling of Entfremdung which seems likely to raise serious psychological problems. This feeling is in itself sufficient to explain the naïve efforts made by many teachers and those responsible for them to impress their contemporaries.

For many teachers, filling their classrooms with audio-visual aids and teaching machines provides a mere tranquiliser and a way of believing and making believe that they too are in the van of progress.

We feel that one of the innovations most urgently needed is to give teachers at the training stage a thorough initiation into educational research. In this same connection, it seems to us that the only way of giving practising teachers a complete re-training would be to involve them gradually in operational research projects.

GENERAL CONCLUSIONS

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Having made a number of different approaches to the problem of innovation, we can now attempt to consolidate and supplement our observations.

1. Fundamentally, it is practically impossible to introduce an innovation which runs counter to the dominant forces in any community. Each community seems to secrete a kind of antibody which sterilises and subsequently eliminates the innovation.
2. More precisely, any innovation in the methods of education or evaluation which does not respect the objectives laid down by dominant policy and thinking is doomed to failure.
3. Education is largely conservative. Resistance to innovation is therefore bound up with its nature.
4. For thousands of years man has lived in a largely static world and has been conditioned to immobility. Stability and a regular biological and psychological rhythm are more-over essential to his physical and mental health. The transition to a dynamic civilisation has been accompanied by a cultural crisis so acute that it is not even certain that our civilisation will be able to survive the shock. In any event it seems pointless to attempt, over a very short period, to change mentalities, attitudes and Weltanschauungen which have been developed over thousands of years. During childhood (i.e. when the basic features of personality take shape) how many people now living received or are currently receiving an education adapted to the modern dynamic world? Their number is infinitesimal.
5. Initial learnings are pure conditionings which acquire extraordinary solidity once they are well established with adequate and oft-repeated reinforcements. No well-defined scientific strategy has yet been produced to modify the type of conditioning which is opposed to innovation. This

type of deconditioning, incidentally, has to be handled with extreme care to avoid a disintegration of the personality.

6. There is often a considerable distance between external postures and deep-seated attitudes, between professed ideals and real behaviour. Teachers may embrace a new theory of education in all sincerity but may not change anything fundamental in their own procedure.
7. More particularly, teaching is a skill, a "know-how" and therefore, to a considerable extent, a one-man craft. It is an idle dream to imagine a kind of teaching which would assume the rigour and regularity of an organised scientific production process, for the very process of education presupposes a give-and-take between human beings which in its complexity and its absence of any strict determinism does not lend itself to integral quantification and forecasting.

A craft cannot be learnt or exercised without concrete and specific rules. It is useless to imagine that general principles of reform, even if they are welcomed, will suffice to change the behaviour of many teachers. To succeed, an innovation must be accompanied by precise rules.

8. This craftsman's individualism is particularly well entrenched in teaching. In many cases it was first observed and absorbed when the future teacher began to go to school. Subsequently, it was actively practised and often for many years.

This is the reason why many innovations are used in the service of the methods they were supposed to replace and, in the worst cases, enable bad teaching habits to be further consolidated.

9. From a more abstract standpoint, a new teaching technique is pointless unless there is a theory to guide its use. The appearance of a powerful technique, however, may well release productive thinking.
10. Compared with the training of doctors and engineers the psychological and pedagogical training of teachers has generally remained at a low level. The social and financial status of teachers reflects this inadequacy. It is therefore understandable that the teaching profession does not always attract the best minds. The case of nursery

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and primary school teachers is striking in this connection. Somebody will no doubt have to find the courage one day to publish a White Paper showing that, as we have realised from certain of our research assignments, there are teachers who possess neither the education nor the intellectual level to understand, for example, the psychological theories which are required for the proper exercise of their function. It will be a painful task to expose this situation as it will strike at individuals who are simply victims of an inadequately developed civilisation.

11. Many teachers are scrupulously honest and are afraid to drag the children entrusted to them into a hazardous venture. They also know, by experience, that there is no lack of innovators who are more concerned to further their own careers than to labour patiently in the vineyard.
12. The administrative organisation of our educational system is such that initiative, innovation and efforts to improve the system are hardly encouraged or supported. In particular, most western countries have no arrangements under which the individual teacher's efforts to improve his efficiency are rewarded by salary increases. In certain cases the union principle that it is the function and not the qualification which should be rewarded may even discourage this type of initiative.
13. For lack of an objective evaluation of the efficiency of teachers or the results of their teaching there is no reward for quality. Incidentally, satisfactory methods of evaluation have yet to be discovered and, apart from the United States (particularly the Stanford Center for Research and Development in Teaching), it is certain that no country makes the minimum effort necessary to encourage progress in this field.
14. Highly centralised educational systems are more resistant to innovation than others.
15. Improvements in teaching are hampered by frequent interference from people who lack any kind of qualification. Because breeding and raising a child is primarily a biological matter and because everyone around us has been to school, everyone has his opinion as to the way in which children should be brought up and educated. Although the opinions of non-specialists are bound up with and limited to their own experience, few hesitate to generalise on the

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strength of that experience. Moreover common sense, with all the subjective factors this implies, often appears to be an adequate criterion for airing opinions about technical problems. Many parents have peremptory views as to the way in which spelling or geography should be taught. Even the highest responsible policy-makers still take decisions in many cases which are based on their own common sense and that of their advisers rather than on any careful prior research.

16. The present fad for innovation and gadgetry may be just as much a source of stagnation or regression as a source of progress.

VII

THE IMPLICATIONS OF TEACHERS' ATTITUDES FOR THE REFORM OF TEACHER TRAINING

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SUMMARY OF KEY ISSUES

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The aim of this paper is to review some of the research that has been carried out concerning the influence that teachers have on their students' performance, and to indicate what implications any of the finding may have for the reform of teacher training. Three kinds of research are considered - survey studies relating home, school and teacher factors to the educational achievements of students ; experimental studies of teacher behaviour ; other studies which have indirectly revealed the influences of specific teacher factors.

The results of survey research have not been particularly helpful in revealing the ways in which teachers make a difference. The two major findings appear to be

- i) that the quantitative models so far developed for research of this kind have not permitted a true estimation of teacher effects considered independently of the influence of other home and school factors, and
- ii) that measures of teacher behaviour are more effective in predicting student performance than information on qualifications and experience.

Research into teacher behaviour has also as yet been singularly lacking in demonstrating how teachers make a difference. While experimental research aimed at studying the act of teaching, and classroom investigations directed at improving the efficiency of teachers are both giving promising leads for future work, no single factor has as yet been isolated of which it could be said that it was clearly and directly associated with improvement in student learning.

A number of research studies have been carried out in recent years, however, which have supported the view that the attitudes of teachers - and the classroom practices they adopt as a result - are more important in determining student outcomes than the more material factors such as school buildings, size of class and the

textbooks or apparatus provided. In particular, the view is put forward, with some supportive evidence, that what teachers believe, particularly about such concepts as "intelligence"; helps to determine the standard or level of performance they come to expect from their pupils.

The implication of the ways in which teacher attitudes may influence pupil achievement is briefly considered, especially as this might affect the training of teachers. Four areas for possible change are considered :

- i) since student teachers will hold different sets of beliefs and attitudes, their individual reaction to any particular teaching method or approach must be given priority in their training,
- ii) if it is true that performance can be improved when teachers hold certain positive attitudes concerning their pupils' ability to learn, then it is clearly important that any training of teachers should include the attempt to develop these positive attitudes,
- iii) the importance of practising teachers being able to keep up to date with the findings of modern research implies that their initial training must include courses that equip them with the means of understanding research reports, and
- iv) if the attitudes of those who teach influence the achievements of those who learn, then clearly the attitudes of the staff of training institutions, particularly towards controversial issues such as comprehensive versus selective education, or traditional versus progressive teaching methods, are of paramount importance and must affect the major policy decisions of the institution.

I

EVALUATING THE EFFECT OF TEACHERS ON STUDENT ACHIEVEMENT

Considering the enormous sums of money that the United States has invested in the past 100 years or so, both in the actual development of its educational system and in research into improvements of this system, it is almost incredible to think that one of the most significant questions to have stirred this great nation in recent years has been the one which formed the title of a recent publication of the United States Office of Education - "Do Teachers make a Difference ?" (USOE, 1970).

As Don Davies says in the foreword to this publication, "Intuitively we know that teachers do make a difference - both positive and negative - in how a student performs, in his level of achievement, in his behaviour, in the values he acquires. If teachers did not make a difference we would be satisfied with schools run and operated by machines". Why, then, ask the question ? The question was originally raised in the United States following the publication of the report "Equality of Educational Opportunity" (Coleman, et.al., 1966) in which the relative influences of various school, home and other background factors were compared to explain pupil achievement in school, and which produced the following conclusion :

"Taking all these results together, one implication stands out above all : that schools bring little influence to bear upon a child's achievement that is independent of his background and general social context ; and that this very lack of independent effect means that the inequalities imposed upon children by their home, neighbourhood, and peer environment are carried along to become the inequalities with which they confront adult life at the end of school". (op. cit., p. 325).

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It does not require much insight to appreciate that this conclusion carried with it far-reaching consequences. As Guthrie (1970) points out, if it is incorrect but allowed to persist unexamined and unchallenged, belief in it could make it become self-fulfilling. Conversely, if it is correct but unheeded, the prospect of vast amounts of money being wasted in training teachers and trying to improve the educational process is alarming.

Needless to say, the major reaction to the conclusions of the Coleman Report has been attempts to prove them wrong. Criticisms have been made of the inadequacy of many of the measurements used, of the way in which the data collected were utilised, and particularly, the types of statistical analyses employed were faulted. A number of authors have carried out different analyses using the same data (Bowles and Levin, 1968 ; Hanushek, 1968 ; Mayeske et.al., 1969), and Guthrie (1970) has reviewed the results from other similar type studies. None of these, however, has come up with any startlingly different conclusion. Guthrie can only state: "On the basis of information obtained in the studies we review, there can be little doubt that schools do make a difference", but he is unable to specify just where, and the re-analysis of the Coleman data by Mayeske et.al. declared: "In conclusion, it may be stated that the overwhelming impression received from these data is that schools are indeed important. It is equally clear, however, that their influence is bound up with that of the student's social background".

The United States has not been alone in finding that the influence of schools and teachers takes second place to that emanating from a pupil's home and social background. A regression analysis using the data obtained from the IEA mathematics study (Husén, 1967) showed that teacher and school groups of variables made only a small contribution to explaining student performance compared with the parental variables which included the mothers' and fathers' education and occupation. In England, the national survey carried out for the Plowden Report (Central Advisory Council for Education, 1967) is particularly noteworthy. It, too, like the studies carried out in the United States, found that factors originating with the school and teachers were not as important as those concerned with the home background (Peaker, 1967). A follow-up, four years later, of the same children included in this study, stresses even more the importance of the early pre-school years and the small part played by secondary education (Peaker, 1971a).

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There is little doubt that large scale survey studies of the kind so far described have, up to the present, been of only limited value in revealing what is important about teachers and teaching. Part of the difficulty in reviewing the evidence obtained from survey data is that two alternative interpretative views can be adopted, both of which, however, give rise to a certain degree of pessimism. Mayeske and his colleagues adopted what Peaker (1971b) has termed "the agnostic view" in which each of the variables being considered in any analysis is assigned only the unique part of the available variance and the remainder is put into a joint account which it holds in common with other correlated variables. Since the criterion being predicted - usually student achievement - correlates to some extent with almost any attribute of the student, home, school or teacher, inevitably most of the variance falls into the joint account. The unique part attached to any school or teacher variable is, therefore, always very small and often not significantly different from zero, and there is as yet no way of determining how to divide up the joint contribution. Mood (1970) sums up this view by saying that "the present rudimentary state of our quantitative models does not permit us to disentangle the effects of home, school and peers on students' achievement" and therefore, "at the present moment we cannot make any sort of meaningful quantitative estimate of the effect of teachers on student achievement".

Peaker himself takes what he calls "the positive view" which likens education to a building. "Buildings" he says, "rest on foundations and the later stages of education rest on the earlier". (Peaker 1971b). He therefore argues that where there is a clear chronological order among variables, the earlier ones should be taken first in any regression analysis. Being conceived, born and brought up in a particular home and neighbourhood occurs before schooling begins, and hence the influence of those variables associated with a pupil's home and background should be considered before those of the school and teachers. Because of the intercorrelations between home and school factors, however, removing the effects of the former also removes a considerable part of the latter. Again, therefore, this leads to the pessimistic result that school and teacher variables inevitably come out as being either very small or non-significant.

Large scale survey studies, which contrast home and background influences with those exerted by schools and teachers, also inevitably suffer from the fact that the difference between the

best and the worst home backgrounds - considered from the point of view of intellectual and cultural stimulation - is, within any country, considerably greater than that between the best and the worst school or teacher. The standard of teaching in any educational system is certainly far from uniform, but inevitably the data collected in surveys is of the kind in which there is relatively little within country variation - type and length of training are typical of the kind of variable used. Furthermore, such variations across teachers that do exist on this type of variable are often cancelled out when analyses are carried out between schools, although, of course, this would be accentuated in the different types of school of a selective system. Usually it is not found possible in survey research to obtain information on the more relevant variables associated with teacher quality and, where data has been collected, it is on a variable that is only serving as a proxy for something that cannot be measured or possibly even defined. Measures of teachers' verbal ability, for example, have been found among the most useful of predictors of student achievement (Hanushek, 1970), but it is not verbal ability per se that is necessarily important in teachers, but a number of other attributes for which the verbal ability score is serving as a substitute. It would appear that to discover which particular attributes of teachers and teaching are really important, it is necessary to look more closely at the actual classroom teaching situation.

In recent years, an increasing amount of attention has been given to the study of different aspects of teacher behaviour, and a very comprehensive review of research in this area has been given by Rosenshine (1971a). Much of this work has, however, introduced an artificial element into the study of teacher behaviour, either in the laboratory or the classroom, and not a great deal of it has been concerned with real teachers in real classrooms. In another review concerned specifically with research of this latter kind, Rosenshine (1971b) has commented : "In both an absolute and a comparative sense there is a notable lack of classroom research on how teachers make a difference". He notes at most only 70 correlational or experimental studies in which observed behaviours of teachers or students have been related to student growth, and a great many of these were doctoral dissertations carried out on a very small scale. And the studies that have been carried out have not exactly been forthcoming with a spate of positive results that have yielded any clearer understanding of what makes an efficient teacher.

Considering the obvious importance of the teacher as an integral part of any educational system, and the vast sums of money that are spent on preparing him for his job, it is surprising, to say the least, that not more research has been carried out and that the findings have been so limited. It is perhaps worthwhile to consider why this should be so.

In the first place, there would seem to be some tacit assumption that teachers are all alike - at least in so far as the act of teaching is concerned. Both in the processes used for educating and training them and in the way in which they are expected to apply a prescribed teaching method or approach, little consideration appears to be given to the fact that there is (fortunately) an enormous variability among the individuals that make up the teaching profession, and that it is more the exception than the rule that two or more of them will react in precisely the same way to either receiving or giving instruction. This fact has certainly been overlooked in countless research studies. As an illustrative example, the research associated with streaming or homogeneous ability groupings may be cited. A very large number of investigations, both in the United States and the United Kingdom, were carried out from about 1920 onwards in which attempts were made to compare the performance of children in streamed and unstreamed groups. Typically, a number of streamed classes were compared over a period with a number of unstreamed classes. In nearly all the studies reported, it was implicitly assumed that the teachers' influence was more or less constant within each type of organisation, or, in other words, that the experimenter, by controlling for initial differences between his two pupil groups, was genuinely studying the effect of his main independent variable, namely, whether the class was streamed or not. It was pointed out by Goldberg et al., (1966) and Barker Lunn (1970) however, that all these studies omitted to take into account either the attitudes and beliefs of the teachers or the classroom practices they adopted as a result of these. It was not surprising, therefore, that different studies produced different results. Barker Lunn, in her study, in fact found that both the attitudes and practices of the teachers ranged along a continuum, and that about half of those taking unstreamed classes really believed in streaming and pursued methods and approaches in the classroom that were more suited to that type of organisation than to the one in which they were actually teaching.

Commenting along similar lines, Rosenshine (1971b) refers to the fact that "an instructional programme is not a single variable".

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All too often comment is made about evaluative studies carried out on curriculum packages or programmes such as Head Start, Individually Prescribed Instruction, Biological Sciences Curriculum Study, Nuffield Science, Midland Mathematics, etc., as though they were a single package and all pupils receiving them were in fact having exactly the same instruction. That this is not so will be obvious to any teacher, but demonstrative proof comes from studies which have investigated instructional activities of teachers within a single programme. Studies of this kind have also been reviewed by Rosenshine (1970) who concludes that "there are significant differences among the instructional activities of teachers within specific instructional programmes or curriculum materials packages". A study by Gallagher illustrates the point. Comparing six classrooms using the BSCS curriculum, he found significant differences in the percentage of teacher talk devoted to the cognitive styles of description, explanation and expansion. Gallagher concluded: "The data would suggest that there really is no such thing as a BSCS curriculum presentation in the schools... each teacher filters the materials through his own perceptions, and to say that a student has been through the BSCS curriculum probably does not give as much specific information as the curriculum innovators might have hoped" (Gallagher, 1966).

Nearly all the researches reviewed by Rosenshine have come from the United States. The conclusions drawn about the implied universality of educational programme "brand" names apply also to England and probably other European countries. Eggleston at Leicester University, for example, is at present carrying out a study for the English Schools Council, the main aim of which is to compare the attainments and attitudes towards science of pupils taught by contrasting methods. Recognising the futility of accepting simple labels such as Nuffield and Non-Nuffield, the first stage of Eggleston's investigation has required the preparation of observation schedules by means of which different teaching styles can be quantified and characterised.

The results of this study, incidentally, are of a particular comparative interest, owing to the way in which "curriculum packages" are viewed in England and the United States. Although there are wide variations within either country in the way in which teachers see their role as curriculum innovators, there are also considerable national differences which, to some extent, are reflected in the teacher education and training practices of the two countries. In the United States, curriculum innovation is seen

very much more as being something only to be handled by the specialist, with the teacher largely playing the role of technician - putting into practice the plans and programmes developed by others. In England, on the other hand, teachers are generally suspicious of the curriculum package and, although prepared to accept some ideas from expert colleagues, reserve very much to themselves the freedom to experiment with those ideas and adapt them to the needs of their own classroom. This fundamental difference in the role concept of the teacher needs further investigation. If the national differences postulated have any basis in reality, then the differences between teachers found by Gallagher and the other researchers reviewed by Rosenshine, may be relatively small compared with the inter-teacher differences occurring in England. In any case, it is clear that, even in the United States, it is not sufficient to develop a new curriculum programme or instructional method without also studying how it is used by different teachers in different schools.

Both survey and classroom research so far carried out cannot be said to have been particularly helpful in discovering how teachers make a difference. Undoubtedly a further reason for this has been that appropriate instruments have not been developed to measure the important variables. Part of the difficulty, of course, is that it is not such an easy matter deciding what is important and, unfortunately, there is the inevitable negative correlation between the degree of importance and the ease of development. Gagne (1970) has summed up this particular problem very well. Using the usual educational model - input, process and output - he distinguishes in each part between, on the one hand, proximal variables - those which are really important and, on the other, distal or correlated variables - those which are inevitably resorted to by other researchers. On the input side, Gagne considers "opportunities for learning" as having most relevance, whereas the variables most used are home and community environment, school environment, teacher climate, instructional materials, etc. So far as the process variables are concerned, he recognises the point made earlier, that it is the human action which transforms distal input variables into proximal inputs or what the teacher does with his instructional material that is important and not the correlated variables of teacher characteristics, abilities, length of service, etc. And, on the output side, Gagne draws attention to the inevitable use of correlated measures - standardised achievement tests and attitudinal measures - instead of more direct measures of what

the students are able to do. He admits the difficulty of the problem here, and suggests as a possible solution the use of time to achieve specified objectives or some form of criterion-referenced measure of breadth of subject knowledge.

In a general summing up, it would seem that research into whether teachers make a difference has not really produced anything of value for administrators and policy-makers. At most the evidence from survey research has emphasized the fact that teacher effectiveness is best estimated by some measure of performance rather than any index of qualification or experience. Even direct research into how teachers make a difference has failed so far to give any clear points that could lead to ways of improving student achievement. It is a fact, however, that few would dispute that teachers vary in their efficiency and it would seem necessary to turn to research of a less direct kind in order to obtain evidence of which factors appear most to influence teacher effectiveness.

II

TEACHERS' ATTITUDES AND EXPECTATIONS AND PUPIL PERFORMANCE

It has already been pointed out that the studies of streaming, or homogeneous ability grouping, carried out before the 1960s yielded mostly inconclusive results since little or no account was taken of teacher attitudes and the classroom practices that stemmed from them. Research into streaming was not alone in this omission. The fact that teachers - like everyone else - often possessed quite strongly-held beliefs and attitudes about educational issues and that these beliefs and attitudes exerted a direct influence on the way they carried out their job of teaching, seemed hardly to be appreciated. The measurement of attitudes may not have progressed as rapidly as the measurement of cognitive abilities, but although techniques have been available since the 1930s, and have been used in many other areas, teachers appeared to have been spared. There has now accumulated, however, sufficient evidence from a number of research studies to demonstrate that for the teacher, as for most people, what one believes plays a not inconsiderable part in determining one's actions.

It is not the purpose of this paper to pursue a theoretical discussion of the way in which the attitudes of teachers can actually influence the achievement levels of their pupils, but rather to cite a number of researches which provide some supporting evidence for the views held. Teacher attitudes are rarely, in fact, a direct cause of pupil achievement at a particular level, and certainly there are other factors also operating in any given situation. It is suggested, however, that the process is brought about by the attitudes that teachers adopt towards certain aspects of education influencing the level or standard of performance which they come to expect from their pupils, and this expectation, in turn, plays an important part in helping to determine the actual

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performance produced. This simple chain - attitudes, expectations, performance - is not necessarily followed. The expectations of teachers may, in fact, be determined by factors other than their attitudes - by the curriculum policy of an education authority, for example, as may be illustrated by the following study (Pidgeon, 1958).

A 100-item arithmetic test given as part of a national survey in England to a probability sample of over 3,000 primary school pupils aged between 10 years 9 months and 11 years 8 months was also given to a similarly constituted random sample of pupils of the same size and spanning the same age range in California, United States. Thirty of the items were eliminated from the test given in California since they involved money or unfamiliar units of weight. The mean scores on the remaining 70 items were 29.1 for the English pupils and 12.1 for the Californian. It was not disputed that eleven year old children in California were just as capable of producing as high a level of performance as the English children had it been expected from them. It was demonstrated, however, that factors such as the length of schooling and the different social conditions prevailing could have played only a minor part in accounting for the large score differences, and that the most important factor was the definition of standards and objectives and the amount of time and effort that was considered desirable to devote to any aspect of the curriculum. The State-imposed curriculum in California established educational goals which determined the levels of achievement to be expected from children of a particular age or grade, and this level was considerably lower than that which teachers in England had come to expect from pupils of the same age.

That teacher attitudes influence expectations can be readily demonstrated. One area where the importance of teacher attitudes may be seen is with sex differences in the teaching of mathematics. The societal view held in many countries that mathematics is strictly a subject for boys, and that they are inherently more capable than girls of achieving success in it, is undoubtedly shared by many teachers. There is evidence, however, both at the primary level (Daniels, 1959) and the secondary level (Dale, 1962) that girls in co-educational schools achieve a greater success in the subject than they do in single-sex schools. A similar finding for whole countries was reported in the IEA study (Husén, 1967). Other factors besides attitudes may be operating here, but this evidence is certainly suggestive that when girls are taught in an

atmosphere where the traditional female suspicion of mathematics is less noticeable and where, perhaps, the teachers are less inclined to doubt their abilities in the subject, then they make greater strides than they would otherwise have done.

A further, perhaps more direct example of the way in which the attitudes of teachers influence the expectations they have of the pupils' levels of performance is provided by Burstall. In a study concerned with the teaching of French to children of primary school age, she developed and administered a scale which measured the attitudes of the teachers concerned to the teaching of French to children of low ability. It is interesting to note in passing that the teachers ranged widely in their attitudes from the 25 per cent who considered that "teaching French to low-ability children is a criminal waste of time", to the 20 per cent who, possibly appreciating the fact that even the dumbest child in school could learn to speak French quite fluently - in France, believed that there was no reason why the less able child in English schools should not "learn French as well as anyone else" (Burstall, 1968). After a period of two years, all the children concerned in the investigation were given a listening comprehension test of French, and the low ability children (arbitrarily defined by their scoring below minus one standard deviation on other attainment tests) divided into categories. A high scoring group consisted of those scoring above the mean for all children and a low scoring group consisted of those who scored below minus one standard deviation. The latter were not randomly distributed throughout the experimental sample, but were found to be concentrated in a small number of schools where the teachers had expressed a negative attitude towards the teaching of French to low-ability children. In a similar manner the high scoring low-ability children were found to be concentrated in those schools where the teachers had expressed more positive attitudes.

A further finding from this same study is also of interest here. It was found that the low-ability children reached the highest level of achievement in French when they had been taught in heterogeneous groups with teachers holding favourable attitudes. The most detrimental circumstances appeared to be a combination of homogeneous grouping and negative attitudes. In commenting on these results, Burstall says "In a complex of factors determining a pupil's achievement, it must surely be recognised that the teachers' attitudes and expectations are of paramount importance. We readily accept that curriculum change cannot be effected without the whole-hearted involvement of the teacher ; we are perhaps less

ready to recognise that changes in the curriculum, no matter how far-reaching, will have little effect on the pupil from whom the teacher expects - and obtains - a low level of achievement" (Burstall, 1970).

It was pointed out at the beginning of this paper that in the national survey carried out for the Plowden Report in England (Central Advisory Council for Education, 1967) factors associated with pupils' home background were more important than those originating within the school. Within the home background, however, motivational factors such as the attitudes of parents played a more important part than the material circumstances. It is suggested here that, in a similar way within the school, the part played by the attitudes of teachers - and the classroom practices they adopt as a result of those attitudes - may prove to be far more important than the more material factors such as school buildings, size of class and the textbooks and apparatus provided.

The idea that the expectations of teachers help determine their pupils' performances is not new. In describing the education of deprived children, Marburger (1963) states the issue clearly : "The teacher who expects achievement, who has hope for the educability of his pupils, indeed conveys this through every nuance and subtlety of his behaviour. The teacher who conveys hopelessness for the educability of his children usually does so without ever really verbalising such an attitude - at least not in front of his pupils" (op. cit., p. 306). Ravitz (1963) related this expectancy of teachers directly to intelligence testing. "We are slowly coming to appreciate that the real damage of the I.Q. test is its subtle influence upon the mind of the teacher. Teachers, often unconsciously, expect the level of performance from the child that his I.Q. test indicated, a practice which, taking into account the weaknesses and inadequacies of these tests, really doesn't give some children half a chance to succeed" (op. cit., pp. 15-16). Later he described how the lower estimate of the potential ability of disadvantaged children caused the self-fulfilling prophecy to go into effect. He observed of slum schools: "The children were not encouraged to learn very much ; the teacher expended little energy on anything else but maintaining order and bemoaning her lot ; as a consequence, the children fulfilled the low expectation, which in turn reinforced the original assumption to prove the teacher was right" (op. cit., pp. 19-20).

This last comment directly relates teacher expectations to the measurement of intelligence. Considering the widespread use

of intelligence tests by teachers to provide estimates of the innate potential of their pupils, this is an important notion which requires support from direct experimental evidence. A study by Pitt (1956) in which teachers of fifth grade boys were given, at the beginning of the school year, correct I.Q.'s for one third of their pupils, under-estimates by ten points for another third, and over-estimates by ten points for the remaining third, provided no conclusive results. Assessments and tests of achievement at the end of the school year showed no effects of the misinformation. Considering the unreliability of the tests and their possible lack of validity in providing estimates of innate potential, this result is perhaps not altogether unexpected.

The most dramatic study purporting to demonstrate the effects of teacher expectations is that by Rosenthal & Jacobsen (1968). They carried out an investigation in a Californian school, which apparently demonstrated that randomly selected pupils about whom their teachers had been told they would make "intellectual spurts", in fact, subsequently demonstrated significant I.Q. gains compared with their classmates. This study has, however, been condemned as "technically defective" by Thorndike (1968) and Snow (1969). Rosenthal, it would seem, clearly believed in the self-fulfilling prophecy - "how one person's expectation for another person's behaviour can quite unwittingly become a more accurate prediction simply for its having been made" - and was determined to find some evidence for it operating in the classroom. Thorndike does not take issue with the "general reasonableness of the self-fulfilling prophecy effects" (Thorndike, loc. cit., p. 708), but with the inadequacy of the research procedures and the inappropriateness of the conclusions drawn.

There would seem to be a basic difficulty in attempting, as Pitt and Rosenthal tried to do, to provide experimental evidence of the self-fulfilling prophecy effect operating with individual children. If comparisons are to be made within classrooms, the number of experimental children involved must inevitably be very small, so that a viable research design is not easy to set up. It must also be noted that experimental studies will always involve the teacher being given false information, and in the case of individual children, unless this information is grossly false, in which case it probably will not be believed, there is not much chance that the study will produce statistically significant results.

The practice of streaming, or dividing children for the purposes of instruction into relatively homogeneous ability groups,

however, provides an opportunity for teacher expectations to influence whole classes. The arguments for this apply equally, of course, to whole schools and Butcher has, in fact, made the suggestion that when children are divided into different types of school, as in a selective system of education, it is a "reasonable theory that lower expectations of teachers and others will result in lower performance" (Butcher, 1968, p. 281).

The argument is, of course, that teachers of a low ability stream will know whether they actually have intelligence results or not, that they have a class of low potential ability that is capable of only a limited level of achievement. To hold such a view, it is necessary for the teachers concerned to believe (a) that there has been a reasonably accurate assessment of their pupils' potential ability and (b) that low potential can mean only a low level of achievement.

There is clearly a conflict of opinion concerning the veracity of these beliefs. Eminent psychologists still take different sides over this issue as Jensen (1969), Kagan (1969) and the other contributors to Volume 39 of the Harvard Educational Review demonstrated. And if psychologists are not agreed on fundamental issues - such as whether test measurements give reasonably accurate estimates of potential ability - it is not surprising that educationists and teachers remain confused and show a reluctance to change their thinking and the educational practices that go with it. It is suggested, therefore, that where streaming occurs, there will be a tendency for all the children in any given stream only to be taught what the teacher expects pupils at that level of ability to be able to learn. And, as Yates has pointed out, children themselves "are obliging creatures and are very inclined to produce the standard of work that their elders regard as appropriate" (Yates, 1966, p. 137).

The argument, which has been developed more fully elsewhere, (Pidgeon, 1970), is that the level of achievement expected, and hence attained, is to no small extent determined by the beliefs held by teachers about the concept of intelligence. While this may hold for individual pupils, it is in the circumstances of streaming that its effect is most likely to become apparent. Is there any direct evidence for this contention? There would appear to be only one experimental study reported in the literature. Flowers (1966) selected two seventh-grade classes in each of two schools located in depressed areas of two cities. The classes were chosen so that the measured abilities and achievements of the

pupils were approximately the same in each. The teacher of one class in each school, however, was told that it was one of the top groups in the school. After one year the children were re-tested. The results from the two schools differed. In one, the "experimental" class has barely significantly higher average I.Q. compared with its "control" and showed no differences in achievement. In the other school, the "experimental" class showed significantly superior achievement but only the same intelligence as its "control". Such evidence is far from conclusive. It must be pointed out that the classes were small (19 to 24 children in each) and the range of ability and achievement somewhat limited. No ready explanation was available as to why the more favourable expectation should have led to different results in the two schools. Flowers did find, however, that the teachers of the "experimental" classes were more favourably disposed to their pupils and found them easier to teach.

It is conceivable that an experimental study to examine the effects of teacher expectations can be set up, but there are clearly difficulties involved unless the numbers of pupils concerned achieve reasonable levels. Deliberately misinforming teachers also carries with it a number of hazards and obviously an appropriate kind of situation must be found before the experiment can be carried out. An alternative approach, and one which is more amenable to study, is that of forming the hypothesis that, under certain conditions, teacher expectations will influence pupil performance, and then deducing possible effects, the presence or absence of which can be examined. For example, it can be argued that one of the effects of streaming is to widen the achievement gap between the dullest and the brightest children since the expectancy of top stream teachers for relatively high attainment helps in itself to lead to this result being obtained, just as the expectancy of bottom stream teachers for relatively low attainment helps to produce this result. Vernon has suggested how this might work ; how streaming might be responsible for the under achievement of some pupils. "Children who are relegated to a lower stream to suit their present level of ability, are likely to be taught at a slower pace... These initial differences become exaggerated and the duller children who happen to improve later fall too far below the higher streams in attainment to be able to catch up" (Vernon, 1957).

There have been a number of studies which compared the achievements of pupils in schools which stream with those in schools

which do not stream. Daniels (1961) compared the performances of children in two large primary schools that streamed for ability with those of children in two similar schools that did not stream. Daniels stressed that the non-streaming in the latter schools was a "consistently thought out policy" or, in other words, the teachers in these schools did not believe in streaming and felt in fact "that it was educationally wrong to do so". His results revealed a consistent trend towards smaller dispersions of test scores in the unstreamed schools ; the standard deviation in 22 of his 24 separate comparisons were smaller with unstreamed children although only five of these reached statistical significance.

In the large scale research into streaming in primary schools by Barker Lunn already referred to, further evidence of this effect of streaming can be found. Up to seven different ability and achievement tests were given in the study in each of the four years during which a sample of some 5,500 children attending streamed and unstreamed schools were followed up. Comparisons were made within three social groups and separately for boys and girls. In only 59 of the 288 comparisons made altogether did the test variance in the non-streamed schools exceed that in the streamed schools and none of these reached statistical significance. In all the remaining comparisons the dispersion of scores in the streamed schools was greater than that in the non-streamed schools, 53 of these reaching significance at the 0.05 level, and a further 25 at the 0.01 level or above (Barker Lunn, 1970).

The evidence reviewed here on the extent to which the beliefs and attitudes of teachers actually exert an influence on their pupils' performance is not conclusive, although it provides strong support for the hypothesis that teacher expectations can become part of a self-fulfilling prophecy system which helps to bring them about. If there is any truth in the contention, however, and there is no contrary evidence or any plausible alternative hypothesis to account for the kind of results obtained, for example, by Burtall, then the implications can be far reaching. The concern here is with the implication for teacher training, but it is not irrelevant to note how the notion is already beginning to influence classroom teaching practices.

The idea of "Learning for Mastery" which Bloom has developed from the "Model for Learning" propounded by Professor J.B. Carroll (1963) is very much an endeavour to get away from the traditional teaching-learning pattern in which the initial expectations for the success or failure of students get transmitted to the students

through grading procedures and methods and materials of instruction until the final grading of students becomes "approximately equivalent to the original expectations". "This set of expectations", says Bloom, "which fixes the academic goals of teachers and students, is the most wasteful and destructive aspect of the present educational system. It reduces the aspirations of both teachers and students ; it reduces motivation for learning in students ; and it systematically destroys the ego and self-concept of a sizeable group of students who are legally required to attend school for 10 to 12 years under conditions which are frustrating and humiliating year after year. The cost of this system in reducing opportunities for further learning and in alienating youth from both school and society is so great that no society can tolerate it for long" (Bloom, 1968).

Bloom's claims for the Mastery Learning approach may not be accepted by everybody, but Block (1971) has assembled the results of a number of experimental studies which demonstrate that following the new approach, 60 per cent or more of students can achieve mastery of specific units of instruction compared with the usual 10 - 30 per cent achieved by traditional classroom methods.

The changes that have taken place over the past 30 years or so in the British Primary School, have certainly not arisen from any consideration of the effects of teacher expectations, yet this quiet revolution in classroom practices and teaching methods would be seen by many to have anticipated the results of recent research in this area. What is implied by these changes, by the use of such terms as "free day" or "informal education" is well described by Silberman (1970). "Advocates of informal education", he says, (p. 208) "begin with a conception of childhood as something to be cherished, a conception that leads in turn to a concern with the quality of the school experience in its own right, not merely as preparation for later schooling or for later life". And he repeats that oft-quoted sentence from the Plowden Report (Central Advisory Council for Education, 1967) "Children need to be themselves, to live with other children and with grown-ups, to learn from their environment, to enjoy the present, to get ready for the future, to create and to love, to learn to face adversity, to behave responsibly, in a word, to be human beings". Silberman describes the actual physical changes that have taken place, the removal of individual desks and tables and of classroom boundaries and the dispensing with fixed time-tables, and he outlines the changed techniques used by teachers, but he emphasizes particularly

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that this new concept in schools "is less an approach or method than a set of shared attitudes and convictions about the nature of childhood, learning, and schooling".

Changes in teacher attitudes which are concerned with the major aims and objectives of a school as an institution are not confined to the special circumstances of the British primary school. In secondary schools in many different countries some fundamental issues are being raised concerning the place of schools in a modern society. A variety of opinions are held on the role of the school today, ranging from what might be described as the traditional view which sees the school as a small community of pupils and teachers concerned principally with intellectual learning and more or less cut off from the larger adult world, to that in which the school is conceived as an institution embedded in a series of services and environments, including industry, the social services, parents, etc. The particular attitudes adopted by teachers on this issue must inevitably affect the development of a school and hence exert an influence on the education of the pupils in it. They cannot, therefore, be ignored in teacher education and training.

There is one further aspect of teacher attitudes which merits a mention here; this is the attitudes that teachers adopt towards innovation and research. Research itself does not have a great deal to say. Miles (1964) deals sparingly with the issue, but does refer to the fact that teachers, while not hostile to new ideas are like most professionals in bureaucratic organisations, in that they tend to resist innovative demands. Marklund (1967) made a study of the attitudes of elementary and secondary teachers in Sweden to proposed changes in the organisation of schools and found that whereas the elementary teachers were for the most part receptive of the new ideas, there was very much greater resistance to them from the secondary teachers. In England, the National Foundation for Educational Research made a special study of the views of teachers about educational research (Cane and Schroeder, 1970). Attitudes varied, as might be expected, but most regarded research as having some degree of importance. Ignorance about its aims and results was, however, widespread. Again, this is an area deserving more attention in both the initial and in-service training of teachers.

III

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CONSEQUENT CHANGES IN THE EDUCATION AND TRAINING OF TEACHERS

In countries with reasonably well developed systems of education, the differences between the least efficient and the most efficient teacher may be relatively small when compared with the difference between the least efficient and the most efficient intellectually and culturally stimulating home, and between the least and most able students. Nevertheless if it is ever hoped to improve the efficiency of teachers, it is to this difference that attention must be directed. It may be possible in the future to improve the efficiency of the best teachers now teaching, but there is no doubt that more immediate gains are likely to be achieved if the less efficient were brought up to the standards of the more efficient. How can this be achieved?

Survey research, apart from revealing that the overall gain is not likely to be enormous - compared, that is, with the gain that would be achieved if the least efficient home background were brought up to the level of the most efficient - has merely pointed out that teacher efficiency has more to do with something the teacher does than with what he is. A study of teacher behaviour, in other words, is likely to afford a greater clue to what makes a good teacher than a knowledge of qualifications, length of service, etc.

All this may be useful information, but it does not point the way to improving the standards of teaching. Much experimental research is now going on, however, which is investigating the relationships between different teacher behaviours and measures of pupil learning. These studies (cf. Nuthall and Church, 1972) are not primarily concerned to produce results of immediate value for practising teachers or to guide teacher training, but pursue the study of teaching for its own sake and aim to achieve a greater understanding of how children learn in classrooms and which teacher

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behaviours are related to that learning. Hopes that more direct studies of teaching in real classrooms would lead to clearer prescriptions for improvement have also not yet materialised, although there is perhaps a better appreciation now of the problems involved and there are a number of suggestions for lines of further research which may prove more fruitful.

It is research of a less direct kind, however, that has revealed one of the most important factors influencing teacher behaviour. In diverse ways, it would seem, the efficiency with which a teacher achieves success with his pupils is governed to no small extent by his basic philosophy - by what he believes concerning the aims of education and by the attitudes he holds towards the practices he is asked to adopt. Quite clearly, if improvements in the education and training of teachers are to lead to greater efficiency in their teaching, then factors associated with the development of beliefs and attitudes cannot be ignored. What changes are implied by this assertion? What factors should be taken into account in order that training may become more efficient? Four possible areas are suggested for consideration.

The first point which, it is considered, does not at present receive sufficient attention, stems from the fact that students training to be teachers are individuals each possessing their own set of beliefs, attitudes and prejudices. While many students may share some of their beliefs or attitudes with others there must exist wide differences within any group which would lead to quite disparate views being held about many of the methods and approaches the students may be asked to adopt. Nevertheless, all too often college lecturers will urge a particular philosophical approach, or invite their students to accept a particular method, presumably in the expectation that it will be widely accepted. Studies by McLeish (1969) and Crompton (1971), however, demonstrate that while teachers' attitudes to controversial educational issues tend to move in the "progressive" direction during training, wide variations still remain at the end.

An example will help to illustrate the point being made. It has already been mentioned that there appear to exist national differences in the extent to which teachers are prepared to accept "closed" curriculum packages, although both in the United States and in Great Britain there are considerable individual differences in the attitudes held about them. As one answer to the question of how can teachers make a difference, Rosenshine advocated their widespread use. "Educational products such as curriculum materials

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packages have the potential to enable a teacher to accomplish much more than he could without the materials and suggestions for their use" (Rosenshine, 1971). Rosenshine, while advocating that such packages should be given extensive follow-up evaluation in order that the varied reactions to them can be studied, nevertheless appears to make the assumption that, if properly developed, they would be accepted by all teachers. Undoubtedly in the United States and Great Britain as well as in other countries, there are many teachers whose attitude towards the curriculum package is one of total acceptance and whose efficiency would improve considerably if they were to be used. But this could not be said of all teachers - perhaps not even the majority. For many, the very idea would be an anathema, demanding the rejection of resolutely held views or placing impossible restrictions on their own creative abilities.

One implication, therefore, of the recognition that student teachers, like the children they will eventually teach, have individual opinions and attitudes and, indeed, even prejudices, is that college courses must not be unduly restrictive, demanding a rigid adherence by all those taking them. Techniques of individual instruction are already being experimented with in the primary and secondary schools of many countries, to cater for the different needs of children and their different rates of learning. The fact that teachers, too, differ, both in the way they are able to learn and the way they are prepared to teach, must also be recognised.

If the attitudes that teachers held about educational matters do in some way influence their pupils' performances, then it would also follow that increased pupil achievement would result if some of the teachers' attitudes were changed. The implication of the findings of the Burstall study quoted earlier are that, if those teachers holding negative attitudes to the teaching of French to young low-ability children were changed to match those of the more positively inclined teachers in the study, the performances of many of the children would improve. How is this change of attitude to be brought about?

For the most part there is a reluctance on the part of teachers to accept change. Teachers are commendably conservative and rightly resist a move away from well known and well tried methods to those unfamiliar and untried. Despite this, the pressures from curriculum developers and educational innovators being what they are, changes constantly occur. It is one thing, however, for a teacher to accept a material change, but quite another to expect it will

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necessarily be accompanied by a change of attitude. Inevitably when an innovation or new teaching approach is publicised, many schools and teachers jump on the bandwagon without full appreciation that their old way of thinking is now outdated. This point was well illustrated by Barker Lunn's study of streaming (Barker Lunn, 1970). Many schools were observed which changed to a policy of non-streaming, yet retained teachers whose beliefs and attitudes strongly favoured streaming. These teachers continued to use classroom practices which were entirely inappropriate to the new type of organisation. It is difficult to stem the tide of change, but equally it would seem necessary for teachers to be fully prepared for it. It is suggested, therefore, that an understanding of the way in which beliefs and attitudes influence action must be made an integral part of teacher training, and that when considering educational innovations, the full implications of adopting a particular viewpoint should be fully appreciated.

It would seem necessarily to follow from this that the preparation teachers receive should equip them with the means of appreciating the results of research. The Cane and Schroeder study referred to earlier made it quite clear that, in England at any rate, all too few teachers were able to read and understand even the simplest of research reports. A course covering the basic design of experiments, elementary statistics and research procedures would seem to be a necessary prerequisite of an appreciation of the fact that one of the main functions of educational research is to provide evidence for sound decision making whether this is at the level of the policymaker, administrator or teacher. It will be the more efficient teacher who is able to keep himself up to date with research findings and who, as a consequence, is able to appreciate the ways in which his own beliefs and attitudes guide both his acceptance of new ideas and the ways in which he puts them into action.

If the attitudes of teachers influence their pupils' performances there would seem no reason why the same effect should not be produced in teacher training institutions. The fact that teacher attitudes towards educational controversies do change during the period of training (Crompton, 1971) suggests that the views of college lecturers are not entirely ignored. Certainly, it could be hypothesised that the general views adopted by a training institution about the aims of education or the role of schools in a modern society will exert some influence over the developing minds of its students. There exists, for example, considerable

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opposition to the modern "progressive" unstructured child-centred approach to learning (Froome, 1970), and the Black Papers (Cox and Dyson, 1969, 1970) have pronounced strong opposition to, among other things, the development of comprehensive reorganisation in England. Research into both these issues has not as yet yielded sufficient evidence for either to be resolved with any certainty, and hence mixed attitudes about them will inevitably be held by training college staff. It is not suggested that this, in itself, is necessarily detrimental, but it is the main thesis of this paper that awareness of the implications of the different views held is as important as the right to hold the different views. The ethos of a training institution and the attitude to work generated by its staff, therefore, may well be of greater significance in producing efficient teachers than the distillation of knowledge about the materials and processes of educational practice.

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VIII

CONDITIONS FAVOURABLE TO INNOVATION IN EDUCATION :
AN ANALYSIS OF THE FUNDAMENTAL FACTORS
IN THE RECRUITMENT AND TRAINING OF PERSONS RESPONSIBLE
FOR TEACHING

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SUMMARY OF KEY ISSUES

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Through its origins, function and destination, the educational system tends to perpetuate itself as it reproduces. If it is to change, it needs to be disturbed and subjected to outside constraints from political and social forces which fix new targets for it. But it will remain almost entirely the responsibility of the teaching body to translate into terms of teaching and didactics what has first been defined philosophically, politically and socially.

Innovation in education is conceivable only insofar as it aims at improvement, and is durable and generally applicable, i.e. effective, only insofar as it succeeds in doing so. In view of the present state of educational systems and the rapid evolution of our society, innovation must be both total and life-long.

Thus, one of the fundamental factors of "reproduction" in the educational system is the organisation of the recruitment and training of the various categories of educators. At present, the content and style of this organisation tends to reinforce its own bureaucratic, inflexible nature, a characteristic of the early industrial societies. This phenomenon is accentuated by the great division between the various types of recruitment and training.

Although important innovations in education should be designed and carried out before any extensive changes can be made in teacher recruitment and training, the various changes must go hand in hand. For without new initial and continuing training, accompanied by adequate improvements in working conditions, the practising educator who wishes to innovate would soon be exhausted.

A detailed analysis of the evolution of contemporary society will make it possible to determine the new style of education and deduce what changes are necessary in the operation of the training colleges for the various types of educators.

The staff chosen for these colleges should preferably be young and dynamic. Their own teaching and their contacts with educational research in the context of new relationships with

student-teachers will enable them to acquire a favourable attitude towards innovation.

The atmosphere of human relationships and the organisation of work in the training colleges should be a means of "deconditioning" student-teachers from their previous school and university experience. It should be seen whether new recruitment criteria can be introduced enabling a preliminary assessment to be made of candidates' ability to co-operate and communicate, to criticise themselves and innovate, and to receive an intellectual training based on both the new scientific culture emerging in our society and on an introduction to research.

In this perspective, a number of proposals have been made, aimed at promoting new methods and content in the training colleges, such as group dynamics, simulation of teaching situations (even futurology), the pluridisciplinary approach, self-evaluation, comparative education, sociology, technology and new science teaching, introduction to research and development, etc.

This is probably the way to ensure that the educator will not identify himself too closely with a role that is bound to change, will not confuse the image he may have of himself at any particular moment with his actual self nor confuse function and role, or function and task. For this confusion in the educator's mind lies at the very root of the refusal to innovate.

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GENERAL INTRODUCTION

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The following pages are an attempt to discover how the recruitment and training of teachers at all levels, educational advisers, inspectors and even educational administrators, and consequently the recruitment and training of their trainers too, could be used to promote, if not activate, a policy of innovation in education.

The document should be read as a working paper. It does not claim to do more than state a number of problems and describe them in detail before suggesting possible solutions. Above all, it offers subject matter for thought and discussion. It is hoped, however, that these considerations and discussions will give rise to reform projects and research programmes.

The report is in two main parts :

Part One describes the new context in which recruitment and training policies favourable to or necessary for innovation will have to be introduced.

The search for appropriate methods of recruiting and training educators (1) would in fact be quite haphazard if the basis of the choice had not first been decided : what type of man should be recruited and trained. Recruitment and training are only means whose rational study demands prior knowledge of the ends. Before tackling this twofold requirement we have described the sort of man capable of innovating. In no matter what field, innovation demands a certain type of mind, mental attitudes and qualities of character ; in their absence all innovation would be impossible ; they are consequently of the utmost importance. This is true in every field, and education is no exception.

We were first obliged to define what was meant by such innovation. We thought that the best method of obtaining this definition was to ask three additional questions in succession and to try and answer them :

- 1) We have chosen the word "educator" as being most convenient to describe all those who in one respect or another (teachers at all levels, principals, administrators) form part of the educational system and contribute towards its operation. This word will be used in the same sense throughout this paper.

- Why innovate in education ? (first point)
- Why is this type of innovation so constantly and universally topical and why is it the subject of such passionate argument and so much extensive research today ? (second point)
- Why do traditional forms of recruitment hamper the solution of innovation problems ? (third point)

Under the second point, particular emphasis has been laid on the changes in contemporary society, characterised mainly by the role of science, the rapidity of change and consequently closer relationships between innovation and life-long education.

The third point refers to the obstacle arising from previous training and recruitment at all levels.

Part Two analyses the changes necessary in recruitment and training procedures if innovation is to be encouraged. The first recommendations therefore concern "deconditioning" and transition measures. Before suggesting measures for promoting the innovative spirit and attitude and encouraging consultation and collaboration among all those taking part in the educational system, the fundamental obstacle of "reproduction" has to be tackled. This obstacle is not created by the agents of the educational system but by the system itself. The phenomenon has been analysed from the angle of the main characteristics of the traditional forms of recruitment. On this basis it has been possible to consider the measures for developing the spirit of co-operation and attitudes of communication among educators both at recruitment and training levels. In the latter case, special emphasis has been laid on the practice and theory of human relations in the training colleges and on possible new forms of teacher training, such as the pluridisciplinary approach and the development of interdisciplinarity in curricula.

Another issue is concerned with measures to promote the spirit and attitude of innovation in training colleges. Emphasis is laid on the importance of the various evaluation mechanisms during training. We have also stressed the training value of comparative education, closely linked to a knowledge of sociological phenomena.

On the basis of the analysis made in Part One of the relationships between education and society, the latter half of Part Two outlines the main issues in the content of the intellectual training which the training colleges should offer student-teachers. We have first shown the limitations of the role that can be played by the educators in renewing the system in which they exercise their functions. This role, though limited, is nonetheless necessary. Innovation would not be possible without the political, economic

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and social will and means, but the educators must also be in favour of it and the means must be found for them to carry it out.

In particular, two fundamental elements in their intellectual training have been retained : orientation in terms of the new needs of the individual and society, and the introduction to research and development.

The first element stresses the link between the development of the spirit of innovation and that of particular innovations proposing a specific educational content for training. Various intellectual training methods are mentioned, such as the introduction to the interrelationships between school and society and their implications, or the new place of science teaching.

These are tentative suggestions, since most of the proposals must be explored further and should be the subject of research. We try then to show why the educator cannot properly apply the results of research and carry out the innovation if he is content with being a docile executant after waiting patiently and passively. It is therefore necessary to define his participation in the research, devise a type of recruitment showing which people are best fitted for such participation and evolve a form of training which develops these propensities through the acquisition of the necessary skills.

Part One

THE NEW CONTEXT OF TEACHER RECRUITMENT AND TRAINING POLICIES

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Innovation necessarily implies change. In order to innovate, it is therefore not only essential to be ready to adopt new aims for education, new ways of teaching, i.e. new systems, a new content and new teaching methods, but also to promote them. This would be impossible if it were not also agreed that new functions may prove necessary and above all that the known functions of teaching, advising, inspecting and administering may call for new roles and new tasks. In order to improve the exercise of the former, we must be prepared to change the latter.

INTRODUCTION

RELATIONSHIP BETWEEN THE ROLE, FUNCTIONS AND TASK OF THE EDUCATOR

Let us now see what the possibility of making this distinction demands in each case. It assumes first that one does not adhere too closely to, nor identify oneself absolutely with a role, no matter how important. Or again, that the image one may have of oneself at a particular moment is not confused with one's actual person with all its intrinsic variety and freedom. For any kind of educator, such confusion is essentially the sign of a misunderstood vocation. It may lead to a very lofty and very generous idea of the function by giving it the sense of a mission while conferring an almost religious significance on the vocation. To such a point that to stop exercising the former and to stop accomplishing the latter is immediately felt as a threat to the very meaning of existence. This is exactly where the danger for innovation lies, and the French teacher provides us with one of the best examples. He has long subscribed to the image of being the

person who "knows" and who communicates his knowledge to the person who does not know ; of being the person who trains and teaches the rules to the person who is ignorant of them and lives in a totally anarchic and spontaneous fashion. To be a scholar and a teacher, to fill the mind and to discipline the intelligence as much as the passions ! He is moreover convinced that he alone can play this dual role expected of him, and play it because the child of today is the man of tomorrow and this is the only way of preparing for his future emancipation, personal development and social advancement.

Historically, in view of the state of psychological knowledge and especially the social and political situation, this image and adherence to it were inevitable and even - to a certain extent, at least - indispensable. Historically too, it has meant that the French teacher, with his devotion to duty and his disinterestedness, is a highly estimable person who is no stage figure, precisely because he identifies himself too much with his role to be content with playing it.

But this greatness has its price. Any questioning of the role seems necessarily to contest the function, and any alteration to the image is felt as an attack on the person. Being incapable of conceiving of any professional change not implying radical personal involvement, the teacher prefers to remain blind to all signs of evolution and closed to all arguments in favour of change. Thus, over-identification prevents adaptation and soon the highly estimable person becomes stereotyped as a somewhat ridiculous character who has inevitably found his way into comedy and satire.

Resistance to innovation is in this case the price paid for an excessively high and therefore mistaken sense of vocation. The latter does not exclude but on the contrary implies a certain detachment, due not to lack of interest but to mastery of the role assumed, and even a quite Socratic irony unrelated to morbid doubts or destructive humour, as regards his own knowledge and competence. The refusal to set into a stage character does not mean that he is prepared to play any role as his fancy takes him, as though professional life were an act in a play, but rather that he is resolved never to separate the sense of vocation from the demands of the profession. To meet these demands implies, among other things, from the standpoint of the problem discussed here, displaying vigilance and attention where the role is concerned. These virtues are necessary but inadequate, and we shall see what they involve from the point of view of recruitment and training. They can only

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facilitate, but not provoke, constant awareness of successive new roles. They can only support the acquisition or introduction of means of understanding or even discovering the awaited new roles. These means still have to be conceived and defined. This we shall endeavour to do.

In the same way as an identical function (teaching or educational administration) may demand new roles, an identical role may demand new tasks. Although a proper sense of vocation recalls the necessity of knowing and mastering a craft, this is not to be confused with perfection of performance in carrying out tasks long since defined once and for all. It also implies and calls for a succession and variety of tasks that are sometimes entirely new. We could even go further and argue justifiably that there can be no real adherence to new roles without real acceptance of new tasks. But this means that in order to take on these new roles it is necessary to possess or acquire attitudes and qualities of character which have not so far been mentioned. A short but fairly complete list of these might be : to escape from the conditioning induced by habits of behaviour, to overcome the laziness engendered by the habits of accepted approaches, established techniques or tested methods, to be able to break away from the familiar well-trodden paths of routine, to be prepared for the effort demanded by new forms of learning and to see that it is required of men who have retained or acquired sufficient power of adaptation - who can at any moment mobilize their intellectual instruments and handle them with masterly dexterity - proving their effectiveness by building new behavioural structures.

We must then ask what educators conforming with this profile need in the way of recruitment and training. We must now repeat in connection with new tasks what we said about new roles. Attitudes and qualities of character are so important that it will be necessary to find how they can be detected before they are developed in those possessing them and how they can be communicated to those who do not have them.

But the future "educators" should also be given the means of understanding or even discovering and identifying their new tasks with precision. Furthermore, the effort put into these tasks must be rewarding but not excessive. The educator, who will have a difficult, constantly repeated and semi-continuous training, would be quickly worn out if he were not initially trained and subsequently assisted by training methods whose intrinsic effect and value will be increased by an adequate improvement in working

conditions. We must therefore see to what extent and in what ways recruitment and training in all forms and at all times can meet this new set of requirements.

We shall analyse the concept of innovation rather more closely in order to draw a clearer profile of educators who are capable of innovating, whatever the manner and field of innovation may be. We shall confine our analysis more specifically to education and for this purpose we shall ask two additional preliminary questions:

- Why have innovation in education ?
- Why is innovation such an important topic today and such a universal theme of discussion and research ?

1. WHY HAVE INNOVATION IN EDUCATION ?

In order to answer this question, it is first necessary to agree on what we mean by "innovation in education". However, to define it as a simple change would not get us very far (1) since change for the sake of change and introducing change simply in order to avoid the dangers, real though they may be, of habit and routine give us no valid reason nor any real opportunity for building a new school. In any case, innovation may be the belated consecration, application and triumph of an idea which was novel in the past but failed at that time to be transposed into a generally accepted and recognised teaching practice. But true innovation implies such extensive and consolidated dissemination, hailed by custom if not confirmed by law and practice. This first definition shows that although the teacher himself plays a major if not decisive role in innovation, the latter demands the adherence and, more, the active participation of all those involved in education. This is also why it is readily understandable that any real, successful innovation should set the whole system shaking and call in question the recruitment, training, status and role not only of teachers at all levels but, even though in a different degree, of educational advisers, inspectors and administrators as well.

However, we shall understand it even better when we see clearly in the light of the foregoing that it is impossible to conceive of,

1) See in this connection The Management of Innovation in Education, CERI/OECD, Paris, 1971.

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and consequently define, innovation if we do not take account of its real purpose and the reasons justifying it. Innovation is conceivable in education only when it aims at improving it (1) ; it is lasting and capable of being put into general practice, i.e. effective, only when it succeeds in doing so.

How can it do this ? First by enabling education to respond more effectively than in the past to the needs of the individual and society for development. These needs are of two kinds : quantitative and qualitative. In the first case, an effort must be made to provide increasing numbers, and ultimately everyone, with a training which develops personal and social value. In the second, an effort must be made to improve the quality of this training and make it more effective. Clearly, each of these types of innovation involves research, either directly or indirectly through its applications. In education, as in almost all fields, when the problem of quantity reaches a certain magnitude, it quickly and inevitably becomes a problem of quality which may very well call in question the entire educational system (cf. the growing use of school television). This is why research is not solely pedagogical but affects all educational sciences including, with the calculation of costs, economics.

As regards the second type of innovation, it can occur only at the convergence of two series of research. With the first, we endeavour to obtain a better coincidence between the profiles of the men we wish to train, both individually and in society, and the teaching objectives we have set for this purpose. In other words, we try to perfect the pedagogical translation of the human and social ends we have set ourselves. Through the second series of research, we apply to training, and to the educational system in general, either fundamental knowledge acquired recently, itself involving pure research carried out in various scientific fields (biology, psychology, sociology, etc.) or knowledge derived from experience of earlier training. Obviously, the more tangible the improvements obtained, the more chance they have of affecting the entire educational system and consequently the roles and tasks of its many partners, and of introducing forms of training or didactic equipment which, apart from the teaching problem in the strict sense, will make it necessary to ask questions involving all educational sciences, including economics.

1) Op. cit.

It should also be carefully noted in passing that the present analysis does not indicate only that all educators are in fact affected by the problem of innovation. In showing that innovation may be contingent on research of which it is the application, our earlier remarks raised the problem of the relationship between educators and research workers and therefore a new problem of recruitment and training. We shall consequently have to look for, and we shall do so at some length, the kind of solution which can and should be applied.

For the moment we would add that the improvement which justifies and finally defines innovation may also be brought about in another way. The analysis is all the more interesting since it will enable us to demonstrate easily that there is another reason for innovation. The type of innovation to which we are referring now is the one which enables education to meet an apparently new need. In actual fact, both for the individual and for society, this may have existed already. The novelty lies rather in its clear manifestation and in the desire to satisfy it, and it can be explained only by considering the novelty of the historical and social situation.

The fact that training needs reveal themselves in a specific historical and social situation is enough to indicate the close and truly dialectical relationship between society and education. But it is important to analyse this relationship in order to understand the reasons for the movement in favour of innovation, as well as the obstacles and the way in which recruitment and training will remove them.

First, there is the decisive role played by social innovation in educational innovation. There has been no revolution in teaching of any consequence which has not been preceded by an important social movement. This is not surprising ; the educational system, an integral part of the social system, is similar to it and reflects its spirit and structure. But this part of the social system is particularly important : without it, the latter could neither become stable and consolidate its position nor function properly. Society is more than the sum total of the people who compose it, but it needs them to perform its characteristic functions and to do the jobs it requires.

In the absence of this reciprocal relationship between the whole and its parts, made possible by their homogeneity and typical of any kind of organisation, the social system could not achieve the necessary cohesion and balance. This analysis of the

education-society relationship also throws rather more light on the innovatory movement in teaching and enables it to be better understood. It explains first why it is always difficult. Being designed for a certain type of society which it reflects, and anchored in institutions which consecrate its achievements, any educational system tends naturally to resist change and to perpetuate the social system from which it has sprung and whose functioning it has ensured, frequently over a long period. Having contributed towards its normal life, it tends spontaneously to cater for its survival. The analysis then explains why, though always difficult, it is nonetheless necessary. A social movement disturbs the educational system. But it would not lead to any real new society if freshly trained men imbued with the new social spirit, firmly attached to it and determined to make it triumph through the exercise of their functions, were not there to get it going and foster the growth of the emerging society, developing it and giving it life, consistency and durability. The new education is the result of social innovation and becomes reciprocally an agent of social change.

II. WHY IS THE PROBLEM OF INNOVATION SO ACUTELY FELT TODAY ?

It is not easy to answer this question. Modern man is more aware than his forbears of the relationship between social and educational renewal ; some would say the social revolution and the cultural revolution. That is why his desire for social change reveals itself increasingly through his desire to question the educational system. Since the latter makes an essential contribution towards operating and preserving the social system, there is every reason to believe and hope that the changes made to it will back up the social changes which we endeavour to introduce directly or otherwise. But this is not the main reason why innovation in education is today such a general and such a prickly problem. Or rather, this realisation can be explained, largely at least, by certain characteristic features of contemporary society.

A. Towards a total scientific society

It is very rightly said that the industrial society has already become and is increasingly becoming a "scientific society". Machines will not be content with taking over all the routine tasks by automating all well-regulated acts or well-conditioned behaviour.

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We have to foresee the day when they leave men only the functions and work which demand the intensive use of intellectual faculties, complicated reasoning, a high level of skill and therefore of training. It will be increasingly true, and everyone is becoming more and more aware of this, that savoir-faire will be based on scientific knowledge and that know-how will thus become the necessary condition for personal promotion as well as for economic and social power. That is why the demand for education and training is becoming so insistent, while being so strongly supported by those engaged in the struggle for a democratic society.

By a curious but comprehensible paradox, while the scientific techniques introduced into the economy and administration tend to rationalise the organisation and operation of the social machine, the general development of technology shakes established structures and disturbs the old social equilibrium. It is not only the cause of changes in tasks and the redistribution of functions. It creates new ones, as well as new roles which can be filled only by new men linked to each other by new relationships. But, as we saw above, the educational system reflects the social system from which it is derived. Alvin Toffler demonstrates admirably how the industrial society, which he distinguishes from the "super-industrial" society now taking shape, could operate only through the bureaucratic organisation of work and that the equivalent is to be found in the bureaucratic organisation of education (1). In these parallel systems, bureaucracy as understood by the author means well-defined functions guaranteed by formal inflexible statutes interlinked by well-determined authority relationships and hierarchical channels established once and for all. That is why school life is a preparation for social life and why the school is the microcosm of society. The relationships between pupils, teachers, inspectors and administrators are of the same type as those governing social life as a whole. This is also why the demand for education and training is apart from being expressed very forcibly and being very heavy, also accompanied inseparably by additional requirements which, apart from the content of traditional education, question its methods, its conception and drawing-up of curricula, as well as its conception and control of relationships between teachers and taught, and between teachers and all those who collaborate in various capacities in operating the system. Educational demand also expresses the need for innovation and this can

1) Alvin Toffler : Le choc du futur, Denoël, Paris, 1971. See in particular Part Six, XVIII "L'enseignement au futur de l'individuel", pp. 377-395.

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no longer be too biased and confined, for example, to innovation in teaching in the strict sense. More and more it is closely affecting all parts of the system and concerns all who are involved in it.

Separate reforms no longer have much significance and are no longer fashionable. Such reforms will be really effective only if they are part of an overall plan in a programme of total re-organisation. Instead of renewal, we should speak of a teaching revolution. And if this is not to be too slow or too violent, too expensive and too difficult, it is of prime necessity that instead of resisting and becoming victims, all those involved should understand the reasons and the process and should work with and for it. This would seem to assume what is today called by a word not too inappropriate here "retraining". We can also sense, but we shall soon perceive very explicitly and very clearly, thanks to this initial analysis, what new conditions of recruitment and training for the various educational agents will be needed to ensure the feasibility of innovation thus defined and justified (1).

B. Towards more rapid changes in society

But first we must refer to another feature of modern society, otherwise our analysis of innovation would be incomplete and our approach to the problem of recruitment and training inadequate. The changes in the society in which we are living or are going to live are not only very profound but also very rapid. In order to carry out a social function properly, and, more generally, to be able to act in society and have an influence in it, even if only through protest and reform, the men of our time or of the near future will have to be prepared not only to change their roles but to change them often and quickly. This mobility assumes a great aptitude for adjusting rapidly to new working and living conditions, as well as a facility for promptly and easily acquiring the necessary new skills which will call increasingly for intelligence and scientific knowledge. Subsequent analysis of the conditions of recruitment and training shows that the new characteristic of

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- 1) For various reasons - some similar to those we have just analysed - the demand for training in developing countries is just as manifest and heavy and just as inseparably linked with the need for innovation. The latter should have the same scope and affect all aspects, all parts and all agents of the educational system. The analogy is much more tenuous for the analysis which is about to follow.

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modern society is the emergence of three new very useful and very revealing orientations :

It will first be noted that what is valid for all men exercising social functions is obviously equally and even more valid for those responsible in any degree for training these men. More than anyone else, they must be able to change their roles frequently and rapidly. In order to innovate, inventing methods, teaching curricula and new forms of human and professional relations valid for a new relatively long period will not be enough. Innovation becomes an almost permanent, over-recurring need, demanding continuous vigilance and a no less continuous effort of invention. We were therefore more than justified in considering that when it comes to recruiting and training educators capable of dispensing a new form of teaching, it is above all the spirit and sense of innovation and the taste for it which count. This aptitude for continuous innovation necessarily implies, as its natural complement, the aptitude to invent and create. The need to keep a strict watch on one's own acts and their effects and to pay attention to rapidly-evolving social reality and requirements must not stifle or paralyse freedom of creative imagination. Furthermore, owing precisely to the extent of change, the aptitude to invent and create very quickly and unceasingly should be manifest throughout the system and apply to that system itself. As was very aptly observed by the Swedish educational theorists, the essential innovation, which is the source and condition of all the others, lies no doubt in the novelty of a system that is flexible and dynamic enough to be capable of occasional self-criticism and of rebuilding itself on the basis of a new model which is always necessary but always provisional and has always to be re-invented. What gives true innovation nowadays its novelty is that it is both total and permanent. Thus, although individual successive innovations are necessary and important, they count less than the permanence of innovation, i.e. innovation as such, before any consideration of its specific form and content.

C. Towards a closer relationship between innovation and life-long education

We shall now consider the necessary reciprocal relationship between innovation and life-long education. Because of the importance of this relationship, for its own sake and for recruitment and training conditions, we shall examine and explain it in more detail than is usual. Our task is facilitated by the preceding analysis.

For instance, the analysis shows that the men of the future will have an increasing need for education throughout their lives. The growing sum of knowledge does not just mean, however, that it will be necessary to study during working hours or leisure in order to learn enough without staying at school for the rest of one's life. Continuing education is not so much prompted by a quantitative and cumulative concept of learning and know-how as by a qualitative principle. For example, modern mathematics or modern physics should not be understood as being simply mathematical or physical knowledge added to what was learnt in the past to increase the total sum of knowledge. Nor should it be understood as meaning new knowledge displacing acquired knowledge, now alleged to be completely erroneous. It is rather a revision of the basic principles, which are found to be lacking in general application and are modified in direction and scope to correspond to truth in its dual perspective of universality and reality. The same applies to techniques, especially as, becoming more rationalised and worthy of the name of "technologies", they are increasingly based on scientific knowledge. Our ancestors' lamp performed the same useful function as our electric-light bulb. But the principles are diametrically opposed : the lamp gives light by maintaining and controlling combustion, while the electric-light bulb does so by preventing combustion. Although the useful function is the same, it is necessary, in order to understand and create, to have recourse to different functions and different technical operators (1). Technological progress, which is more and more plentiful and rapid, proceeds from this change in the basic principles.

It follows that continuing education, namely qualitatively new education, which should be distinguished from adult education, whose "comprehensiveness" is much broader and teaching significance less revolutionary, even though socially it may have such significance, would be impossible unless a perpetually innovating educational system, which is alone capable of providing such life-long education, were designed and introduced. Permanent innovation is the necessary corollary to life-long education. We say "educational system" because we once again observe that true innovation, perceived not in the abstract but in the very complex and precise context which calls for and justifies it, cannot be confined to

1) G. Bachelard : Le rationalisme appliqué (Applied rationalism), Presses universitaires de France, Paris.

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teachers alone but concerns all educational agents. Thus, if our analysis is correct, it is just as impossible to make a sharp distinction and divide initial training from continuing training as it is to merge the latter with adult training in the broad traditional sense. For while it is correct to say that continuing training is inconceivable and impracticable without a continuously innovating education, the converse is even more true. To recognise the necessity of this new education is to recognise the necessity of continuous training.

A national educational system which was aware of the necessity to innovate frequently would betray the principles on which it is based, fail in its vocation and its task if it were not able to offer the possibility of retraining to the men whom it had previously recruited. Of course, continuing training should really lead us to question the pertinence of the distinction between initial training and further training, whatever name is given to the latter. As the expression indicates, continuing training establishes an education process extending from childhood to adulthood and in the extreme case covering the whole of a man's life. This does not mean that men's life is spent exclusively in learning and training. The continuity refers to the educational process, and although it implies non-termination it does not mean that training time cannot be measured in differing intensities. It implies, more positively, a perpetual but reciprocating motion, whereby the same man can in turn not only be training or working or at leisure but also learning and teaching, both the teacher and the taught. However, innovation in this form and to this extent clearly affects the whole educational system. It is difficult to imagine how the new categories and new meanings thus introduced into the concept of education could fail to question the idea of a system designed as a stable, inflexible and closed model. Here we find, but with greater conviction, the basic idea of the Swedish educationists that all true innovation, viewed from whatever angle, the essential innovation needed in our time, is founded simultaneously on training educators capable of continuous innovation and the creation of an educational system capable of questioning and rebuilding itself on a new pattern, distributing new roles to all its agents and training them for new tasks and new relationships.

In other words, what is required for the whole must be required for the part. Those who are to provide everyone in the social system with new continuing training, in the sense defined here, namely continual and continually new, should with all the

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more reason obtain the means of receiving the continuing training they themselves need and on which the rest depend. For it is at educator level that this training assumes its strongest and fullest significance. Thus, if the national educational system is to be so constructed that it can question, as often as required by pedagogical progress and social evolution, the educational model and institutional system which gives it concrete form, it is through an internal demand whose satisfaction is the prerequisite for its survival.

We must therefore consider how and to what extent the recruitment and training of training college lecturers, educational advisers, inspectors and educational administrators can not only remove the obstacles to the life-long education of all such staff, but also and above all help to bring it into general practice.

III. HOW THE MAIN FEATURES OF TRADITIONAL RECRUITMENT METHODS HAMPER THE SOLUTION OF INNOVATION PROBLEMS

Through inherent, natural logic and functioning, the system tends spontaneously to generate recruitment and training methods which will reproduce and thus perpetuate it. This is a formidable obstacle to innovation.

A. At teacher level

Logically and normally a course of study and training, whatever its content, leads to appropriate examinations. However, on entering employment, a disparity between training and function may become apparent, with three consequences, the first of which usually implies the other two : a deep mutual dissatisfaction, felt differently by each, on the part of the employee and his employer. For this reason, although the problem may persist, it cannot, at least in this general case, grow much worse without quickly attracting general attention and provoking remedial action. Employers will challenge school or university training and qualifications and supplement or partially replace them by examinations or even different types of training of their own. However, when the qualifying or competitive examination designed by the educational system is used merely as a means of entering that system, it becomes much more difficult to recognise the need for change or for further examinations. These remarks on recruitment apply equally

to training. The reproductive cycle (1) threatens to become a vicious circle ; in order to achieve innovation, recruitment and training methods must be changed, but would not this in turn imply that considerable innovations have already been achieved ?

Before we propose a solution to this dilemma, let us give a few examples of the problem. The French tradition of education was founded on the principle that school life should be mainly devoted to learning certain methods and facts which the teacher had to master and pass on. This idea alone gave rise to a whole set of related traits and correlative attitudes that were in themselves sufficient to build up an almost complete portrait of the teacher and make him form a very definite image of his role. The competitive teacher recruitment examination was, and very often still is, simply a more difficult version of the final examination at the end of a study course taken by all students, regardless of their intended professions, instead of being separate from it and a test of opposite or complementary aptitudes. The future teacher follows the same programme, but the standard is of course higher. To require him to possess a firm grasp of methods and knowledge was and still is justified. He must first master them if he is to transfer them to others, as teaching still implies. But this transfer also implies other aptitudes and attainments, and is not the whole, nor perhaps the essence, of education. The competitive examination was simply more selective than the school examination and emphasized the features which should have been toned down and to which others of a very different sort should have been added (2).

B. At educational administrator level

Another example, taken again from the French system, but far from exceptional and found in many countries, concerns the recruitment and training of educational administrators. The fact that administrators are recruited from the teaching ranks should not in itself be criticised. On the contrary, it is highly desirable that administrators should have had previous teaching

- 1) To use the apt expression of Bourdieu and Passeron. It should be noted, however, that this term is used here in a particular sense.
- 2) For example : for a long time, the competitive entrance examination to the Primary Teacher Training College was open only to holders of the "Brevet d'études du premier cycle". But until recently, the papers for the entrance-examination and the "Brevet" were similar, the former being more difficult only because of the different criterion : numerus clausus instead of average mark.

experience. Unfortunately, if we consider both the traditional system to which they belong and the manner in which they are led to exercise other functions within that system, we soon find that conclusions drawn about teacher recruitment must be extended to administrators.

First, recruitment depends partly on the administrative hierarchy, which naturally tends to give preference to those whose attitudes and behaviour show that they accept meekly or support fully what the hierarchy represents, and we have already stressed its bureaucratic nature : each should remain in his place, doing his own job in his own grade. No project may be formed, no undertaking carried forward, at least formally and according to the rules, without scrupulous respect for the division of work and responsibilities while following a pre-determined route. Each jealously defends his functions and responsibilities because they are the key to his social status. He guards them all the more, sometimes to the point of becoming their prisoner, because their narrowness and specialised nature are the only means of gaining him the recognition of others and the right to existence for himself.

But their recruitment is also the result of the teachers' own choice, will and desire, and these are not directed towards rejuvenating a function and performing it better by carrying out new activities ; they want another function in the same system, they want to hold a post whose duties are known in advance and in which they will again find the same attitudes and outlook, accentuated even further by more pronounced hierarchical structures. This desire may be suspect as it expresses less a taste for action and innovation than a hope of becoming more firmly integrated into the existing system in a position where those limitations and failings which have already been exposed are even more marked. Even when prompted by a commendable desire (which might serve the purposes of an innovation policy) to escape from routine or rigidity or to play a new and more effective role, the new administrator finds that the system prevents him from establishing himself in his job except by strictly differentiating his present function from the former one and all others. Thus, in the end he submits more meekly than ever to the model from which he would perhaps have liked to escape.

If the length of this document were not limited, it could easily be shown that an analysis of the recruitment and functions of advisers and inspectors reveals very clearly and precisely a

similar situation. It would be seen that the inspector-teacher relationship is a replica of the traditional teacher-pupil relationship but has become more clear-out, firmer and more institutionalised.

If ordinary training characteristics are also considered, it is easily understood why and how the bureaucratic phenomenon is in fact even more marked. To what has already been said about the general mechanism linking training and "reproduction", we shall now add some details primarily concerning inspectors and administrators, but at times also applicable to teachers (in France, for example). "On-the-job" training, not to be confused with "in-service" training, is not preceded by any genuine or serious preparation for the profession. While complete, properly organised training should of course include practical work and personal experience among and in conjunction with other training methods, it is just as regrettable to reduce training solely to the lessons of practical experience. Under the influence of the working environment and daily contacts, the example of one's seniors will count for at least as much as one's personal experience, and the lessons of the elderly are often likely to be lessons of the past. Such training is then nothing more than pressing the individual into the mould of the system he has entered.

It is true that today efforts are being made to introduce administrators to modern management techniques adapted to their type of institution or service. This is progress, but bearing as it does on the functioning of the traditional system, it is necessarily limited. More efficient management, while beneficial in some respects, may even accentuate the technocratic aspect of bureaucracy, which is one of the main obstacles to innovation. From the innovation standpoint, modern management methods, powerfully backed nowadays by computer technology, can be used in radically different ways. Positive results will be achieved only to the extent that rationalisation techniques and computers are used not so much to improve the efficiency of the existing system (i.e. to increase its rigidity) as to change it by introducing flexibility and giving it the ability to adjust rapidly and reliably to innovations in curriculum or organisation, whose number and quick succession might otherwise lead to disorder and confusion.

C. Through the variety of recruitment methods and their implications

We have seen that, whatever their differences, all competitive recruitment examinations follow the same "reproduction" rule and

contribute to the perpetuation of the same system. Their diversity should not be surprising, however, as it stems from the same logic and allows training to extend and magnify the results of recruitment. Diversity of competitive examinations implies diversity of training channels. The various educational agents, not simply teachers and administrators, but secondary and primary school teachers, and even teachers of different subjects, are trained differently, in the narrow prospect of the one role they will have to play and the precise tasks to be assigned to them. They are trained differently, in separate places, and often in a spirit and life style all their own. These differences and distinctions are well suited to the system into which they will soon be integrated. Although professional life gathers them together it does not let them mix ; they know as little as possible of each other and keep to strictly pre-arranged, scheduled, systematised and, in a word, formal relations. Little prepared to work together, to converse and to co-operate, they are neither requested nor required to do so, thus explaining why this "group loneliness" does not lead to crises of communication and misunderstanding. Barriers are everywhere : between subjects, between speech and thought, between classrooms, between classrooms and offices, and between school and community. Uneasiness and confusion will develop when the system becomes obsolete. Crises and conflicts will break out and spread when the need for innovation is so great that it can no longer be denied or opposed. Then indeed, launching a new and necessarily hazardous undertaking will require a meeting of minds and combined efforts. But because of their manner of recruitment and training, very few will be ready to accept this novelty, face this risk and join this community.

Part Two

NECESSARY CHANGES IN RECRUITMENT AND TRAINING PROCEDURES IN TEACHER TRAINING COLLEGES

For training colleges wishing to provide a new style of training designed to introduce a large number of important innovations into teaching practice and the educational system and, more important, infuse everyone with what we have called the "spirit of innovation", the first major hurdle is obviously the education their students have already had. They have of course been through primary and secondary levels, and until these have been recast by generations of teachers still to be trained, a real "deconditioning" process is necessary. But we know that certain patterns of behaviour cannot be broken either by theoretical courses, even if their logic is convincing, or by new ideas, even if they win adherents and bring about a real change of outlook. The answer lies in experiencing and becoming accustomed to new kinds of behaviour. Only then will new ideas cease to be purely abstract notions and exert their full power; they take on a three-fold significance and by reciprocal effect encourage the adoption of new attitudes and the building up of new forms of behaviour.

INTRODUCTION

SCHOOL AND UNIVERSITY DECONDITIONING AND NEW FORMS OF BEHAVIOUR

A. For student-teachers in training colleges

Although this personal experience and behavioural-apprenticeship is necessary at all times since it allows innovation every chance of being continuous, the particularly important moment comes when a break is being made with traditional education going back a long way into history. Thus, particularly during this period of profound change, "student-educators" (student-teachers, student-inspectors, student-administrators, etc.) must find in their own

lives at the college or in the life styles it offers them during their training period, the opportunity to experience and learn the new attitudes and forms of behaviour to be substituted for the old. Consequently a training policy for a new education capable of innovation needs to give careful consideration to school or university life to the life styles and human relations inside the college and also all those exercises which, though pre-planned, temporary and systematic, nevertheless simulate as closely as possible the situations and roles which the future educator will have to assume, or, better still, create. Giving the student-educator a training which mirrors as nearly as it can the type and style of the education which he is intended to dispense has always been a highly effective method of teaching - even more so in the case of a radically new style of education. Obviously the way of life at the university and the training offered by the college cannot be simply identical or coincide in every respect with those which the same educator will later give his pupils in primary and secondary school. There is a relationship and a parallel, but no more. Even so, the definition and measurement of possible relationships and parallels would make an interesting subject for research.

B. For teachers in training colleges

The danger of falling into a vicious circle in tackling the problem must be clear to all. Is not the obstacle of previous education more formidable still in the case of teachers in training colleges than in that of the student-educators they train? And is it not made more serious by the fact that it is precisely they who are being asked to train new teachers and administrators and introduce a new type of education? At least some partial answers can be given to this difficult question, all of them essentially and directly involving recruitment and training methods.

As regards training itself, everything depends on the extent and quality of research in educational sciences and scientific didactics in higher education and on the degree to which research workers are involved in the education of training college staff. Apart from the problem of higher education, two closely inter-related questions remain to be answered. The first, which calls for far deeper and more systematic research than is being done at the moment, concerns the respective positions to be occupied in the training process by the acquisition of the knowledge needed to teach the various disciplines, and by the various aspects of

pedagogics, whether related to the general problems of communication or to the specific ones raised by teaching in the various disciplines. The second question, which arises out of the first and is of an institutional nature, concerns relationships between training colleges and the university and also, therefore, between their staffs. For our part we believe the approach devised and already partially applied in France to be highly interesting (1). University staff, teacher-researchers (both in specific disciplines or general didactics) take part in the research and training activities of the college. They co-operate with other staff, sufficiently experienced in teaching in colleges and lycées, who have shown great interest in educational research and innovation in their past record and who will not be losing contact with the teaching for which they prepare their new students since they continue to teach either on a part-time basis or for alternating periods.

We have just said that participation in research and innovation experiments should be an essential criterion for recruitment. But other things being equal, we feel that in all education fields (teaching, inspection and administration) innovation has a better chance of being originated and successfully introduced by the young - who are not so thoroughly conditioned to traditional teaching methods and the existing system. This is why, as regards both students and staff of training colleges, we would advocate a policy designed to promote the youngest. We shall see later why and how the changes that a real effort of innovation would bring about in educational cycles would fortunately favour the necessary recruitment policy. But this policy is bound to meet resistance. The tendency towards gerontocracy is strongly rooted in many countries and colours the outlook. Difficult changes of attitude would be necessary.

Finally, another part of the answer to the problem of training college teachers may be found in some aspects (which we have already envisaged and recommended) of the training they themselves have to give. It is as though the problem contained its own solution. In fact - and this will emerge repeatedly and even more clearly as we go on - the pedagogic effect of life in the college and of a mode of training incorporating the attitudes, behaviour

1) In the research institutes for mathematics education (Instituts de recherche pour l'enseignement des mathématiques - IREM). It could well be applied in the future colleges for training secondary school teachers.

and practices best favouring "deconditioning", and best calculated to introduce the attitudes, behaviour and practices required into the new education, has a two-way action. The college teacher is just as likely to acquire them as the student-teacher or the student-inspector. For example, if in order to teach the future educator how to question his own teaching, he is being accustomed to question and evaluate critically - but honestly and as far as possible scientifically - the training he is being given, what is an exercise for him will be an admittedly difficult but formative test for his teacher. When we come to examine the various aspects of innovation-oriented education in detail, we shall see many more examples of this type.

I. MEASURES TO DEVELOP THE SPIRIT OF CO-OPERATION AND ABILITY TO COMMUNICATE AS WELL AS TO ENCOURAGE THE DEVELOPMENT OF THE INNOVATIVE SPIRIT AND ATTITUDES

A. Lessons derived from a critical analysis of the traditional forms of recruitment and training

In our view there are two fundamental conditions for the feasibility and success of innovation in education which the series of analyses on traditional forms of recruitment and training has shown to be closely interrelated : first, the ability to modify the image of oneself, to assume new roles and to adapt to new situations and tasks and secondly, the involvement and collaboration of all educational agents in a process of innovation with a number of phases, involving many factors. It is evident that a system of education in which functions, roles and tasks are rigidly defined and allocated, at least in law, will require no other form of collaboration than those built into its own mechanism and organisation. Equally evident is the fact that it fails to encourage the creative spirit or the aptitude for innovation and it is therefore not surprising if it pits its rigidity and inertia against changes that would require it to be totally reshaped. To borrow a phrase of Levi Strauss, it behaves like "a cold machine", using little of the original energy input, running evenly and practically indefinitely, maintaining its equilibrium and eliminating disorder, but also producing very little and always repeating the same movement, in other words creating nothing at all. Conversely and reciprocally, attachment to a set image, inaptitude and distaste for changing roles and inability to adapt to new situations and tasks

could not be better predispositions for integration into such a system.

It follows that any features of training and recruitment which can arouse in future educators the ability to change their image of themselves and their idea of their role, would also help to form all educational agents into a living community in which communication would be intense, hierarchies flexible and modes of action diverse ; in other words it would also promote a system of education with the vitality and dynamism necessary for rejuvenation through development rather than survival through reproduction. Reciprocally, any features of recruitment and training which would help to create this living community among future educators and their trainers would also promote, in all educational agents, the generation or development of the ability to modify their own image, conceive new roles and adapt to new situations and tasks.

B. New criteria for recruitment

It is easy to see what are the necessary criteria for recruitment designed to develop the spirit of co-operation and aptitudes for communication. The vital requirement is neither knowledge nor know-how. It is rather a question of detecting mental attributes, attitudes and character dispositions. The qualities to be looked for in candidates are a feeling for dialogue, an aptitude to listen and, still more, to absorb ; a curiosity about others which is neither unhealthy nor warped by a mania for passing judgement, but evidence of the will to know and understand ideas and feelings one does not share and situations and callings outside one's experience, one which springs from a sense of human fellowship and a desire for personal enrichment. Efforts should also be made to look for those, who, though realising that efficiency often depends on organisation, do not mistake it for its bureaucratic version and, whilst appreciating a sense of responsibility and the value of authority, do not identify them with the privileges and rights conferred by title or the formal respect of social rank. Let it be said at once that it is easier to state these criteria than to conceive and frame the tests by which they could be applied. Far, in fact, from suggesting ways and means, we are opening up a field of research and merely proposing its main issues.

We also consider it essential that recruitment, by whatever procedure, should not predetermine in any absolute and fixed manner the possible roles a candidate might be required to fill. Nor should the function be predetermined on recruitment. Observance

of these recommendations would have many advantages from the innovation viewpoint. First, it would avoid the recruitment of persons already overspecialised, who would have too great a predilection for or attachment to functions or roles considered in their present provisional state. If the future of individuals is safeguarded by maintaining their availability, and preserving their capacity for different functions and new roles, often as yet unknown, then the future of education would also be safeguarded. Lastly, this style of recruitment could be the gateway to a form of training that would be consistent with it and subscribe to the same intentions ; this is the aspect which we should note at this point in our analysis. Indeed, it would provide access to training in which the streams would not be wholly different and would not, therefore, need to be completely segregated. We feel that training courses that are at least partially the same and can therefore be taken, at least partially, in common, in the same places or in the same establishments, are essential for the success of an education in constant innovation. We are thus already approaching the problem of training.

We now propose a second series of measures encouraging the development of the innovatory spirit and attitudes. Doubtless, efforts could be made to avoid recruiting candidates with too rigid an idea of their future function. But even supposing it were possible to put this recommendation into effect, it would be a means of excluding rather than selecting. This has to be supplemented if not completely replaced by positive selection. It would be much better to be able to ensure from the start that candidates are capable of a certain detachment, have a longer-range view, with regard both to what they are doing and to the image they have of themselves. Then it would be necessary to make sure that this detachment provides the necessary internal capacity for the exercise of freedom, the control of oneself and one's future, adaptation to the present and anticipation of the future. The danger would lie in failing to perceive that this detachment or the questioning of one's current self indicated morbid irresolution or deep-seated doubt about one's own value and abilities or, possibly, an ironic scepticism with regard to everyone and everything and therefore an inability to take anyone or anything seriously.

Professional conscience can develop and grow only between these two extremes and we have already said that a true vocation is impossible without a sense of professional responsibility. This implies action, doing one's best with the means at one's disposal,

but at the same time endeavouring to do better by being constantly aware of the changes that need to be made and the new resources making them possible. A forward-looking intellectual curiosity, a taste for change, not for its own sake but as part of the concern and wish for improvement, and a mind informed on all types of current or foreseeable innovations are so many positive signs recognisable by methods that are not difficult to imagine. But these methods are insufficient and call for more precise definition. Present recruitment methods are so little innovation-oriented that considerable research will have to be done before tests for detecting the existence of the appropriate qualities are available.

C. New spirit of training

1. Theory and practice of human relations

We have already explained why, because of the need to "decondition" and the importance of attitudes and forms of behaviour, the formative value of daily practice was particularly great when a new type of innovation-oriented education was to be introduced. In the training colleges we have in mind, the spontaneous daily practice we advocate would take two forms :

a) Atmosphere of the training college

Community life, mostly within the establishment but also in any other place where training is given (since it is very probable that this will be less and less confined within the school or university walls) spontaneously and inevitably leads to numerous and repeated contacts with a variety of people on a variety of subjects. To live together means learning how to live together, to discover the ideas, feelings and habits of one's neighbour and thus, if not to share them, at least to bear with them as a first step to tolerance, i.e. understanding and accepting that they have their "raison d'être" and their value. Although not always directly related to what will later be the occasion and purpose of the contacts between the various participants in education, this introduction to community life is basic to all specific forms of human relations.

If the various students (student-teachers, student-inspectors, etc.) are not separated, or at least not always, their various trainers will not be separated either. What is more, the organisation and administration of the training college involve many of the functions for which the students are themselves training. In

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this way, through student-teacher, inter-teacher, teacher-administrator, and inter-administrator relationships, the college provides a privileged place for practical experience in which all the forms of relationships which we feel to be necessary for innovation could be practised and their rudiments "learned".

b) Group dynamics and simulation of teaching situations

But to this spontaneous training acquired by absorbing the atmosphere and by daily practice at the college there must obviously be added the systematic training which the college is designed to provide. This type of training may itself take two forms. The first will lie in the direct extension of the foregoing and would transpose the spontaneous practice just described to the level of systematic and programmed exercises based on theoretical and social psychology. One type of exercise, for example, based largely on group dynamics, would deal with the conduct of meetings and all types of behaviour involving inter-personal relationships in a community. The object of the meetings and the subjects of discussion are in this case the pretext and medium for a training whose purpose, despite its concrete nature, remains general : conducting dialogue, teamwork, etc. A second kind of exercise similar to the first but more in extension of the second of the spontaneous practices we have analysed, would be more sharply focused on learning roles in the educational system and would make use of simulated teaching situations and the human relationships that may be generated and developed in imaginary cases. The same student, whatever his own chosen career - which should not, incidentally, be treated as final - should be invited to play different roles on different occasions. Simulation and games can also be used to gain an approximate but instructive experience of the new situations and roles arising from innovations.

These two kinds of exercise are possible, or rather, truly significant and fertile precisely because the college, however incompletely, gathers together those who were normally trained separately. But even so the exercises would be difficult to implement if systematic training was not also given in a second manner. On the subject of recruitment, we said earlier that in order to serve a policy of innovation, it should open the door to forms of training which would not be kept entirely separate because the streams would not be completely segregated. We have just seen that even the concourse of various types of students in their community life has had positive advantages for innovation-oriented

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policies. It is also clear that this coming together facilitates and adds value to training where different streams do not have to be wholly segregated. But, with regard to the first condition we consider essential to the success of innovation in education, we should not forget that we have perhaps attached greater interest and specific value to training in partially identical streams than to the advantages of training in the same place. We have said that the latter facilitates and adds value to partially identical training courses, but conversely it is this identity which to some extent justifies setting up colleges which receive students destined for different careers. We shall now analyse the forms of such training and demonstrate its specific advantages, not forgetting to show how it provides an argument for the second kind of exercise referred to above.

2. New forms of education offered by the training colleges

a) Pluridisciplinary approach to the operation of the educational system

In the first of its forms training will be pluridisciplinary and will be given by different methods ranging from theoretical teaching to observation and from observation to practical experience. Here we can mention only a few examples. It would, for instance, be useful for the future teacher to see what mechanisms operate in both traditional and pilot or experimental establishments. In this way he could see how the present system acts as a brake in educational innovation and also realise what difficult problems new teaching practices create in the running and administration of educational establishments. But this observation which, incidentally, needs to be accompanied by explanation and guidance, should be supported and amplified by more theoretical knowledge and by broader and more scientific information. The management of an establishment needs to be placed in its overall administrative context and this, in turn, requires an analysis of the relationships between the administrative system and the body politic and social. As a further example, the teacher needs to be aware of the economic problems raised by education and to be able to form an approximate but sufficiently sound idea of the cost of introducing a new teaching aid or technique. Conversely, the future administrator or manager needs to have experience of the freedom and resources a teacher requires in order to apply a new teaching aid or technique and this observation again needs to be accompanied

by explanation and guidance and supported and amplified by a minimum of theoretical knowledge enabling the administrator to distinguish between the ordinary, most immediate and, hence, more often than not, cheapest use of a new technique and the development of its full teaching potential. These examples could be multiplied and obviously they would need to be extended to all functions of the educational system. It is in any case clear that this pluridisciplinarity would enable the natural or contrived dialogue between the various kinds of students in the training institute to take shape so as to initiate, prepare and facilitate their future necessary collaboration. It is, incidentally, a pity that we cannot go deeper here into the analysis of this pluridisciplinarity since we would then see the natural emergence of the second of the forms of training referred to, i.e. no longer simply pluridisciplinary but interdisciplinary training.

b) Development of interdisciplinarity

This bears a direct relationship to the first essential condition for innovation, giving it specific advantages and justifying our regarding it as a fundamental innovation opening the door to an open series of other innovations. The compartmentation of disciplines is undoubtedly the clearest and most powerful expression of the social and bureaucratic "compartmentation" that is probably characteristic of the early forms of industrial society as reflected in the educational system. This is also the reason why, because of the relationship that we have analysed, compartmentation is eminently calculated to maintain the phenomenon of which it is the effect. Finally, this is why it is both very difficult and very important for it to be abolished or at least reduced as far as the system of learning allows at the various levels of knowledge and education. It is easy to show that it is an obstacle to what seems to us to be one of the basic conditions for innovation. While there is no room here for the complete argument, a short analysis may be sufficiently convincing (1).

The compartmentation of disciplines exaggerates the analytical character of scientific knowledge facilitating its invasion of all areas of education, and inevitably leads to highly divided, minutely fragmented forms of education, namely the school syllabuses

1) For a more complete analysis see our report published by UNESCO following the "Seminar on the training of teachers for and through interdisciplinarity", Bouaké, Ivory Coast, 24th March - 4th April, 1970, UNESCO, Paris, 1970.

as we know them, with all the resistance they will put up against innovation through their structure and rigidity, their geometrical, military pattern : to each discipline a separate column and in each column as many rows as there are concepts or subjects into which the various sectors of knowledge are themselves broken down.

This compartmentation creates many others. First, there is the division between the various levels of education, since increasing specialisation is matched by hierarchy of functions and segregation of establishments which make it very difficult, for example, for a general teacher in a primary school to have contacts with a subject teacher in a college or lycée. Then there is the division between teachers of the same level but in different disciplines. From secondary level onwards teachers often tend to isolate or even immune themselves in the speciality in which they excel but which they make their own preserve and where they are the only ones who know or can master the language spoken there. And yet those they teach have to enter all these different fields in turn and learn the different languages all at the same time. It is easy to see, in these conditions, that the school does not offer the taught a world cut to their scale, a world of their own where they would feel at ease and be glad to live. Once they reach higher education, no other course is open to them but that of specialisation ; it is at this point that the full separative effect of traditional education can be perceived.

Easy, intensive communication pre-supposes common centres of interest and a common language. But none of these conditions exists. At secondary level, far from interesting pupils in work or problems which might feed their minds and their intellects later on, education may well turn them away from such subjects, or worse, sicken them. But at the same time (and by the same mechanism) as it introduces students to their various but very different and very difficult languages, it fails to provide them with the means of expressing themselves easily on everyday matters and consequently communicating with each other on the most ordinary subjects. At a higher level, by contrast, education polarises interest and focuses communication on narrow subjects about which only those initiated into the language of the specialist will be able to converse. This deficiency is aggravated and becomes particularly acute whenever an attempt is made to introduce a new kind of education. The relationship between this putting of disciplines into water-tight compartments and university conservatism thus becomes vividly apparent. We know now that any access to a higher

level of knowledge assumes access to another level of language ; in other words education at a higher level means handling a new language and developing a stricter and richer understanding of known concepts, using new concepts and sometimes even new linguistic structures. We know too that every time science takes a step forward it invents new symbols, revising the "comprehension" of its concepts and creating new ones. A particular case is that of "modern" mathematics.

The introduction of modern mathematics into education, for example, raises the problem of its relationship with language teaching and demands these initial interdisciplinary confrontations and concertations. They are not the only ones, since mathematics is not just one science among others with a specific language calling for specific study. It is also the tool of other sciences - particularly the physical sciences - and a phase-lag may develop between mathematics studied for their own sake and the mathematics apparatus used by physicists. The same signs and the same terms may cease to have precisely the same conceptual significance. More generally, moreover, physicists may devise their own mathematics according to their own special language so that the same concepts may be denoted by different signs and terms. Once again we find that innovation, however particular and limited on the surface, cannot in reality be confined to this or that narrow, enclosed sector of education. What is new needs to be tested for coherence and coherence, far from restricting innovation, is its guarantee, giving it its full strength and forcing it to assume its full development. Coherence generates not only a chain of specific innovations but also and especially the major one governing and engendering many others, namely interdisciplinary co-operation. But perhaps we have not yet grasped what, in the traditional conception of curricula and the excessive division of disciplines into water-tight compartments, forms the essential obstacle and basic resistance to innovation. Let us take our analysis further.

The more stress is placed on the analytical character of education, the greater the danger of giving it a strongly theoretical, abstract bias. Analysis divides, and by separating ideas from one another it separates them from all forms of reality and isolates them from all aspects of the environment - natural, technical and human. The disadvantages from the teaching point of view are not only cognitive, and do not merely arise from offering the pupil concepts and knowledge which he is too young to assimilate, having

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regard to the type of operations of which his intelligence is so far capable. By its immediate recourse to abstraction, education of this type is necessarily insensitive to the requirements of the person and society and to what they need for their development. The authentic goals of education, giving it justification, meaning and direction, life and dynamism, are lost from sight.

Instead of being the means of achieving these goals, syllabuses replace them. "To do the syllabus", "to finish the syllabus" becomes the primary preoccupation and main objective of the teaching staff. The phenomenon is contagious ; it affects pupils, inspectors, the organisation of work and even school life and establishment administration. "Keeping" to the syllabus, "following" the syllabus, "finishing" the syllabus and making sure that the pupils do the same - this is the basic concern, and it prevents any real attention from being paid to the difficulties and needs of those being taught and stifles any real curiosity in relation to new knowledge and the real world as it appears and changes before our eyes. Yet we have shown that without this attention and without this curiosity the need for innovation will not be grasped, and innovation itself will be neither desired nor sought. In conclusion, though over-concentration on the syllabus in its traditional form is common to all, it in no way promotes the development of a community among the teaching staff. Under the heavy yoke of the syllabus, the field of vision is narrowed and depressed. Teachers argue jealously over their pupils' timetable and work.

Lastly, there is the question of how future educators and their teachers in training colleges may be trained to accept pluridisciplinary education and, above all, to be able to give interdisciplinary education. A brief outline may be given of some of the essential aspects of this training. First, to explain the need for and the value of it, to show some of the obstacles, broaden basic education, generalise training in "team-teaching" both in lesson preparation and in pedagogic communication, and give more freedom to educators so that, released from the constraints of syllabuses, the conformity of inspection and certain administrative rules they may, as a team, try out a more organic education, closer to reality, the person and the environment. But we cannot go beyond these few indications here ; it would mean engaging in a long discussion considerably exceeding the scope of this paper (1).

1) See UNESCO Report, Paris, 1970, op. cit.

Secondly and above all, because, although the advantages of such training are clear, we know next to nothing about its content and methods. We may reasonably hope that it would provide the solution to a number of teaching problems and in particular encourage innovation in education. But it too raises many problems. Though it promises a future crop of original applications, for the moment it merely opens up a vast field of research, and the promise will be kept only to the extent that this research is successfully carried out. As before, we shall confine ourselves here to a few basic points.

The main objective of research will obviously be the establishment of new syllabuses at different levels. At the first, the most general, there is the problem of designing and testing a new model. Should what we call "column and row" training be replaced by another form grouped around a restricted number of subjects? Should the teachers in that case have freedom of choice and, in any case, what will the criteria for this choice be? Up to what level of education will the new model be applicable and what should be proposed thereafter? Research, however, will also cover disciplines: which ones can be integrated, by what means and up to what point? The latter problem involves the dual question of the subjects taught and the educational level. Research should not be guided solely by assumptions of the integration of existing disciplines but should include the possibility of creating completely new disciplines each of which, of itself, would provide a training previously involving several forms of instruction. Clearly, by a chain reaction, the results obtained would call for further research, this time into methods and attitudes rather than syllabuses: how are people and in particular educators to be trained in order to be able to teach the new curricula? One of the surest ways is to link training and evaluation.

3. Developing the links between training and evaluation

This can be done in several ways but should involve the various types of educator at all levels. It would be useful, for example, if teachers in training colleges could review and observe in their first year of teaching the students they have trained. These students, trained in evaluation techniques, should apply them to their own teaching. This evaluation and its results should not be withheld from the student-educators. It would, in fact, be easier to get them to understand and appreciate the difference between the partially subjective marking of the student's work by

the teachers, confirming the teacher in his image and role of sovereign judge, and a searching, objective evaluation of the teacher's work, which, by showing him that he still has much to learn, may cause him to change his attitudes and use or look for other methods. Student participation in this evaluation could well go beyond its normal level in techniques of this kind. When equipped with the knowledge needed for this technology, student-educators could apply it, as far as methodologically possible, to the training they receive. This exercise would be an important contribution to their own training and a useful test for their teachers. In both cases we are thinking more of its intellectual value than its practical utility. Here we again find what we have earlier called the "formative power of exposure to and participation in daily practice". Once in their jobs, students would be more ready to question their own image, role and tasks the more experience they have had of teachers applying the same principle, and the greater their participation in that application. To conclude, they should of course be accustomed to the critical evaluation of their own attempts at the job, made not only by others but also, and especially, by themselves. Not that this last exercise is the only one to have an intellectual as well as a practical value. But since we are concerned more especially with training for innovation, and its spirit and attitudes, in other words the teacher's ability to revise his judgement of his own know-how, and question his self-image and his conception of his role, it obviously has exceptional importance. The methodological difficulties are obvious but not insurmountable, and modern technology can help to smooth them out. For our part we feel it would be valuable to use the self-viewing facilities offered by video-tape recording techniques and closed circuit television for cultivating the spirit and attitudes of innovation. Self-evaluation, however, is not confined solely or necessarily to this method, and other research should lead to the discovery of other techniques.

4. Development of comparative education

Attachment to the traditional image of the teacher, inspector or director can be reinforced by a particular form of cultural ethnocentrism which considers, more or less consciously, that the educational system of which one is part is the best of all or which prevents the perception of the nature and functioning of any other system except through the filter of one's own. Any form of training therefore which has the effect of eliminating this

ethnocentrism would at the same time remove a considerable brake on the development of educational innovation. Some facilities of this kind already exist but many doubtless still await discovery and should be the subject of research. The advantages of comparative education, however, are already available for producing this decentring effect. In this connection we think it significant that France is a country where educators have traditionally had a very noble and elevated notion of their function and an almost sacred, i.e. sacrosanct, conception of their role. At the same time, France has no college of comparative education nor has it had, until recently, any research or training in this field in which educational innovation has such difficulty in penetrating and spreading.

Like so many other types of training, training in comparative education can be of two kinds : theoretical and practical. Both are complementary and necessary. Theoretical education should certainly include systems analysis. It is their respective individual coherence which, by rationalising and therefore justifying the existence of radically different or even opposite arrangements, shows their interrelationship. And it is their plurality which tends to suggest that it is not after all impossible or pointless to contemplate a priori new types of training and education. In comparative education, however, theoretical instruction should not be based solely on the plurality of systems and their internal logic, but also on their transformation and historical development. Case studies describing the successive phases and the various factors and agents of the transformation of an old system into a new one are of the utmost value in proving that the process of innovation is possible and explaining how it works. All this theoretical study requires to be supplemented by actual observation, communication with the persons involved and, wherever possible, live experience. The foreign system must be observed on the spot and in the environment where it is operating ; it needs to be seen from the viewpoint of those involved and on whom its operation depends. The jobs and roles that are unlike those performed in one's own country need to be seen in the form of persons with whom it is sometimes difficult to get on but with whom, also, dialogue is eventually established and views exchanged. The understanding of systems previously unknown, the tolerance of foreign and new ideas and the liberating refocusing of intellect and imagination, may not be wholly dependent of personal communication, but they are at least greatly facilitated by it.

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We have said that comparative education, as we understand it, teaches the notion that, after all, new teaching formulae and new educational systems are not impossible. Now we say that it may even help to suggest them. Although we have argued against encyclopaedic education which, for that very reason, mistakes the nature of knowledge and communicates it badly, this in no way implies that we are accusing knowledge itself. The way to preserve the power of imagination and the creative sense is not the same for children as for adults. At the high level of our research into the problems that we have to solve, flights of imagination and invention need a ground base of knowledge. Whilst ignorance of comparative education is bad in the sense that it may generate or confirm the ethnocentrism which closes the mind to innovation, knowledge in this field, as in many others, is not only good in the sense that it helps to generate a new spirit but also in that it enables that spirit to develop effective new ideas. The innumerable possibilities may stimulate its effort towards new conceptions, increase its fertility, give it impetus and lead it into paths not yet explored.

But this is even more true, and for other reasons, in the case with which we are concerned. With advancing industrialisation, societies grow more alike and can be defined by an increasing number of common attributes, but these similarities do not preclude the differences due to the (no doubt inevitable) carry-over from the past and tradition into the present and modernity and to the unequal pace of development. What is happening today in one advanced industrial society may be the pattern of what is to happen at a later stage of development in another, unless, forewarned of the differences and the possible stumbling blocks, an attempt is made to control the movement in which it is caught up and steer it into a happier future. Applied to modern societies, the comparative method is an improvement on experimentation and a better instrument for scientific research. Some anticipation of teaching methods and educational curricula and systems then becomes possible, in which logic and imagination, forecasting and creativity, strictness and innovation can go hand in hand.

CONCLUSION

COMPARATIVE EDUCATION AND DEVELOPMENT OF SOCIOLOGICAL KNOWLEDGE

The foregoing is a reminder that, in itself, comparison is not reason. The comparative method is fruitful because it is an effective tool of sociology. True comparative education, as distinct from a relatively pointless exercise of over-formal comparisons, is linked with and supported by sociology even though it helps to enrich it. For example, an awareness of the plurality of educational systems and a knowledge of their specific dispositions will strike an effective blow at academic ethnocentrism and conservatism only insofar as the coherence which both justifies and relativises the systems is not purely formal. It will not be purely formal if the relationships of coherence (or incoherence, in the case of crisis and change), with the social system are also brought into relief. Conditions have to be similar if the history of education from the comparative angle is to be fruitful and formative.

Thus out of all the fields of knowledge required for training for innovation, sociological knowledge is among the most important. The significant position we have ascribed to it in education might well be thought exaggerated if its need and usefulness were seen purely in the light of comparative education. In reality the reader may already have perceived, from the analysis in Part I of this paper, that between sociological knowledge and innovation in all its forms there is a very direct and profound connection whose full importance and implications must now be seen from the viewpoint of recruitment and training. Its full importance and the full utility of the analysis will now emerge as we see that the recruitment and training recommendations we have made depend largely, though possibly not entirely, for their effectiveness and even their very feasibility, on the propositions we are now going to outline.

But we shall also see that from the innovation viewpoint sociological knowledge is itself inseparable from other knowledge and intellectual activities which, in their turn, impose new and additional recruitment and training conditions.

11. BRIEF OUTLINE OF SOME ELEMENTS OF INTELLECTUAL TRAINING IN TRAINING COLLEGES

Introduction : Internal and external pressures on the educational system in favour of innovation

If the series of measures enumerated above is not to remain a dead letter, it is essential to break the vicious circle and tackle the fundamental cause of all difficulties, namely the reproduction problem. The significance of this problem must be thoroughly clarified and understood. In reality, it has two aspects which bring us back once again to the key relationship which we have already noted between educational developments and social developments. In the first place the educational system, because of its origins, its function and the ends it serves, tends to preserve itself by reproduction. If it is to change it will have to be shaken, even pushed and constrained, from outside by political and social forces which will give it new objectives and model it to a new pattern. The shrewdest observers consider that what has happened in Sweden and the way in which innovation was introduced and developed there confirms this first interpretation, and their views are echoed in governing circles.

But there is also a contrary - but not contradictory - aspect namely that ultimately the effective renewal of the educational system must and can be accomplished only by the educators themselves. This is of course true not only in the trivial and obvious sense that the educators themselves will be called upon to implement the renewal plan and touch on new lines after receiving the necessary new training from other teachers. It is also particularly true in the sense that they will largely be responsible for devising and introducing the new system, and almost entirely responsible for translating into pedagogical and didactic language what was initially planned and defined in philosophical, political and social terms. However, although the operation of the new system, the application of new syllabuses and the application or invention of new methods are concerned here, nothing would be possible without the will and the power or without motivation, ability, goodwill and adequate proficiency. It is one of the tasks of training to inspire the will and the power. Before we consider how this can be done let us say at once that it cannot be accomplished overnight. Changing the educational system and training educators is subject to the same rules as changing society and training pupils. The change is a total one and may involve and

even require some initial coercion, but the necessity for and exigencies of training make it necessary to proceed progressively, tentatively and in stages. Innovation which involves a clean break with the past requires time. Let us now consider the implications from the recruitment and training standpoints.

A. Orientation of intellectual training in terms of the new requirements of the individual and society

Conversion, adhesion and creation will be all the easier and all the more likely if there is an awareness of the present inadequacies of the system and the needs which the new system should be in a position to satisfy. To be innovation-minded and capable of innovating, it is essential at the outset to understand why it is necessary and why it must aim at certain objectives. But whether we are considering inadequacies or needs, this presupposes some thinking based on sociological information.

1. Introduction to the interrelationships between school and society

On recruitment, an effort will be made, using methods still largely unknown, to select candidates who have already begun to think on these lines and seek this information. Thinking and information will be taken further and systematically developed at the training stage.

a) Social reality and the role of educational planning

Whether considered from its negative aspect (inadequacies) or its positive aspect (needs), the problem will be dealt with from two angles, qualitative and quantitative. With regard to the former, educational planning studies will have to be used to show first the proportion of drop-outs and repeaters and then their unfortunate consequences not only for the future of the individuals concerned but also for the economic and social development of the community. A subsequent study of the career of people who have normally completed their studies will bring home the obsolete or anachronistic nature of a type of training which is the cause of serious damage to individuals and the community at large. As far as the second aspect is concerned, the study of industrial societies should be devised and taken far enough to highlight the differences between them and their predecessors and the consequent qualitative and quantitative changes in their requirements. Particular emphasis would be laid on the growing importance in modern

societies not only of the training given to their citizens but also their dynamics, the speed of the changes they are undergoing and the rapid evolution of their requirements and demands. The method would be excellent to bring home not only the need for a new educational system which is more sensitive to and integrated with the environment, but also the importance of the continuing training yet to be devised and the significance of the problem of its links with the initial training. It would of course be borne in mind that this sociological study would have to be thought over from a philosophic angle to see how the development of the individual could be attuned to industrial and economic development. All these studies are necessary if educators are to find out all the exigencies which motivate and justify innovation in education.

Like many of the types of training we have recommended, this one would have to be provided in different ways. For example, if it is to be fully grasped and efficiently dealt with, the problem calls for theoretical instruction. For the same reason and to ensure that its relationship to the new education is always borne in mind, it would have to be dealt with in a university context and by academics. But other and complementary methods are equally necessary. It is essential for the future educator to be able to observe the characteristics of modern societies and as far as possible realise from experience the ever-closer links between function and training, the rapid changes in functions and roles and the technical and human problems which arise therefrom. This can be achieved by going outside the training colleges and occasionally using the economic and social environment as a training ground. But it can also be done by throwing open the gates of the training colleges to all who possess this experience by virtue of their functions and can make the most effective use of it by teaching methods which break through the isolation of school or university, for example reading of papers by non-academics, round tables and dialogues, use of documentation, etc.

But a knowledge of contemporary social reality and of developed or developing societies would probably be inadequate for genuinely and powerfully motivating innovation and promoting the desire and determination to achieve it. It would have to be sustained by a fuller training of a more philosophical nature dealing with something more than mere sociological information. Only insofar as he apprehends the true relationships between society and education, the social system and the educational system, will the future educator understand that traditional training cannot meet

the new requirements and, more important still, that the essential new training is certainly possible as the role required of it devolves on it by specific vocation and is merely a clearer version of the one which the social mechanisms have always set for any form of training. The more the educator is convinced that innovation is not only indispensable and necessary but also feasible, the more anxious will he be to achieve it. Care must, however, be taken not to confuse a belief in the feasibility of innovation with the discovery and mastery of the means to achieve it.

The same training which convinces the future educator that he must and can play a fundamental part in a profoundly changing society will also convince him that the necessary educational innovation must be as far-reaching and complete as the change in society. Where needs are absolutely new, training must be absolutely new. Consequently, while the spirit of innovation is being communicated it must also be channelled not towards partial reforms for the improvement of isolated details but towards one of the main objectives which condition its effectiveness : the idea that innovation should never be considered except as a break with the past, and never envisaged unless all its implications and consequences for the whole of the educational system are taken into account.

b) Role of educational technology

The second point to note is that it is easy to show how the analysis of modern societies can be applied to the educational system and incline it towards innovation. It will not be difficult to demonstrate that modern technology will not stop at the school gates and that any attempt to prevent it from entering would be dangerous, regrettable and pointless. Dangerous because it would precipitate or aggravate the conflict between school and society. Regrettable because it would mean deliberately and arbitrarily refraining from using modern facilities which might have considerable teaching efficiency. Pointless because technology would ultimately be imposed upon the educational system by economic and social forces and under the worst possible conditions. Once the use of modern techniques is accepted and even desired, it would not be difficult to prove that just as technological expansion has strongly challenged economic, social and industrial structures by profoundly altering the conditions of production, the general use of modern techniques in the educational system will also strongly challenge the structure of that system. As a result, not only will

the future educator be increasingly aware of the need for innovation and even more encouraged to undertake innovation, but he will clearly perceive certain of the conditions necessary for the achievement of this undertaking and will endeavour to create them. From the training standpoint this calls for a study of the changes produced in the educational system by educational technology. Although it has already begun, this study is far from adequate and offers a very wide field for research. Training will also have to include learning how to master the techniques concerned and although this will not be purely mechanical learning, it will have to be based on a minimum of scientific knowledge, as in learning the advanced technologies of industrial societies. Such knowledge would therefore also have to be integrated into the new training.

c) Introduction to futurology

The general lesson to be drawn from sociology is not only that a complete change is taking place in technology and also in economic, social and occupational structures, but that there is not likely to be an end to this transformation which will probably continue at an increasing rate. The men trained by the educational system must therefore be able not only to adapt to a new life and a new society but also to repeat this adaptation effort continually, rapidly and therefore with the maximum facility. They must therefore be prepared to face what Toffler calls "the impact of the future" with the maximum chances of success. This impact will be experienced in all fields and consequently in different forms, but everyone everywhere must always be ready to face up to it. Arrangements will therefore also have to be made for general intellectual training and general training orientations which will enable everybody to deal with the problem. What is true for every function is also true for education, particularly as education will have the task of giving all members of the community the necessary strength and aptitude to face this challenge.

People will be all the better prepared to meet the impact of the future if they have an understanding of the future and the fact that one will not be able to express it in terms of the present and the past. This means that less time must be spent on studying the past and that thinking must no longer be limited to the experience and lessons which it may afford. Provided we test them and submit them to scientific verification, we might adopt some of Toffler's postulates. To consider, for example, how far fictional

or futurist literature may effectively help to shape the new outlook. Moreover, is it not true that one of the best ways of meeting the impact of the future, as Toffler also maintains⁶ (and quite rightly, we may feel), is to prepare for it by anticipation? Rational forecasting is naturally the first form of anticipation because it is the most reliable. It should therefore have its proper place, or at least a larger one than at present, in all fields of training, and particularly in teacher training. Forecasting is, however, based on established principles from which it derives its conclusions or applications and on current knowledge or facts which it extrapolates to make its projections. But rationality i.e. the idea we now have of the growth of reason, shows us the limits, the dangers and, if one may say so, the irrationality of apparently rational forecasts and projections. It explains that science and with it technology which is increasingly dependent upon it and follows it ever more closely, proceeds in a series of bounds from one level to another in a way which is by definition unpredictable. What is known today as "futurology" is very careful to hold aloof from such forecasting but at the same time tries to adopt a rigorously scientific approach. We may therefore suggest that it should be introduced into training. But apart from the necessary caution with regard to a discipline which is still seeking its basic principles, scientific verification of its effects in training would also be needed. At a more modest level, there would certainly be much to gain from fostering these flights of imagination which attempt to depict or simulate the performance, tomorrow or the day after tomorrow, of any particular function and the whole system in which that particular function operates. This presupposes that in each discipline trainers are familiar with the most advanced knowledge and techniques and above all that they are capable of relating them to their place in the development of the reason which supports them. And this applies primarily to educational trainers whose task it is to train future educators in these exercises. Analysis of industrial societies shows two important characteristics of innovation: mass education strongly oriented towards the acquisition of high-level technical capacities.

2. New place of science teaching

The teaching of science must therefore find a new place, provided it is itself renewed to meet certain very important training requirements. First, and at all levels of training, it must be

very modern. The gap between science as it is practised and science as it is taught must be made much narrower. Science syllabuses must be brought up to date and ways and means must be found of adapting them to the different age-groups in the school-going population while keeping them up to date. There is no need to dwell on the importance in this connection of the innovations introduced in North America, the USSR, Sweden and Japan. In the second place, this teaching must be pluridisciplinary because, as part of the real world and therefore obliged to take account of all its components, any technology is constrained to make use of more than one science. Pluridisciplinarity may be an obstacle to the specialisation actually required by a high level of knowledge. It will, however, be noted that pluridisciplinarity is not an absolute constraint, and not to the same extent at all levels of the educational system. It will also be noted that it may be offset or mitigated by the co-operation of specialists and the concerted programming of disciplines. These forms of teaching naturally call for a type of learning which is still a subject of research, but the necessary conditions and known methods might be analysed in a paper of broader scope than our present one. Finally, this teaching would have to include scientific methodology to a large extent. The various sciences are of course continually evolving and must be "re-learned". To be able to relearn i.e. learn what is new, the best method is undoubtedly to "learn to learn", if one may use an expression which has already become rather hackneyed. For all that, it would still be necessary to give this formula a concrete pedagogic sense and bear in mind that learning to learn has a meaning and a value only because ultimately and in effect the intention is to "learn" and thus definitely though not exclusively, to know. The reflexive knowledge of methods and their practice are among the most reliable ways of preparing people to cope with advancing scientific knowledge without excessive effort. It is obvious that to be capable of such teaching, educators will themselves have to receive a training in scientific methodology and epistemology.

B. Introduction to research and development

Teaching and the educational system obey the same laws as other activities and other systems : their progress i.e. innovation, depends on fundamental research (development of knowledge in different fields) and applied research (application of this knowledge to teaching and the educational system). Educational

innovation at the present time largely depends on the very thing on which technological innovation in general depends, namely applied scientific research. It is necessary to discover, while respecting the principles of scientific research, how the modern techniques available may be used to solve the problems facing education for example how to use television to provide a mass education which is also highly technical or abstract. Where new scientific knowledge is available, as in the psychogenetics of intelligence, the problem is to discover, while respecting the principles of scientific research as before, how this knowledge can be applied to the solution of educational problems, e.g. mathematics teaching. Generally speaking, and before we refer more specifically to the various conceptions of educational research, let us say that if innovation depends on scientific research, an analysis of the conditions required to ensure that recruitment and training favour innovation raises the problem of the participation of the educators in research and their relations with the researchers.

As far as teachers in training colleges and more generally the trainers of trainers are concerned, we have indicated above how we conceive their participation in research and with this analysis we linked the analysis of their function and their training. We are dealing here with the training which they will be called upon to give those who will be teaching, inspecting or administering at a lower level, in primary and secondary schools. In any event, we do not believe that these educators who are responsible for other functions can become full researchers if they are available only part-time. The training to be provided will therefore vary according to whether or not their participation is accepted and according to the way in which it is defined.

The nature and the degree of their participation will depend on the model adopted to define the link with research and development. As is known, current educational research is based on two main models : the "linear" model and the "multidimensional" model (1).

1) Reviews of National Policies for Education : United States, OECD, Paris, 1971, Part Three, Chapter I : "Research and Development for Education".

1. In relation to the linear model

The "linear" model makes a clear distinction between the researchers and those who, at their various posts, are responsible for introducing and disseminating the results of research throughout the educational system. This distinction is based on the idea that prospecting and experiment call for a type of mind, attitudes and abilities quite different from those required in execution and management. We feel that this is a sound idea, that its general value is indisputable and its importance fundamental. But even if it were unreservedly accepted in this particular case, it would not exclude the possibility of relationships between primary and secondary school staff and research and researchers, and in our view would even make them imperative. In recruitment, and particularly in training staff, it is therefore necessary to allow for these relationships. Elsewhere we have made a much longer and more systematic study of the relationships and their implications for training (1). Here we shall merely recall a few of the salient points. First, we feel that in educational sciences the researcher needs the co-operation of the educator, even if that co-operation is limited and occurs at specific times and at specific levels in his work. In this field the investigator must not be an outsider and continuous and repeated observations can be carried out, without risk of disturbance, only by those who occupy key points in the course of their normal functions. But it would be a mistake to imagine that this co-operation can be effectively accomplished at minimum cost by a limited and rapid technical training. If the assignment is to be properly performed, its significance, implications and limits must be understood. If the educator is to locate the main direction of research and relate his own work to the research as a whole, he must be trained in the spirit of research and initiated into its methodology. The researcher needs the educator and the educator needs a research training.

Conversely, if the educator is to maintain a dynamic approach to his task and play an innovative role, it is essential to bring him into contact with research and researchers. In the first place, the research spirit fosters the spirit of innovation and the similarity between these two attitudes is considerable, i.e. curiosity, unrest, desire for progress, etc. Secondly, while it is true that innovation often arises from research, it would be

1) Prospects in Education, UNESCO, Vol. 1, No. 1, 1970 : "Educational Research and Teacher Training".

wrong to imagine that it is sufficient to give the results to the educator to ensure that they are used and, above all, used effectively. Without special training the educator will either understand little or nothing of the information he receives or will wait until it is supplied in the form of teaching procedures, "recipes" or "gimmicks" which he will use in accordance with the directions. This conformity, like all other types of conformity, is the very antithesis of the creative spirit and if only the letter of the law is observed there is little likelihood that its spirit will prevail. There is a great risk that these innovations will be purely formal, superficial and insecure. It is therefore essential that the educator should receive a training which keeps him informed of current research, bring home its importance, enables him to interpret its results (1) and realise how it can be transferred or extended to his level and discipline. In this respect, the circumstances of a teacher's training are far more important than the circumstances of his recruitment. Nevertheless, some of the recommendations already made now find further justification and may be clarified and supplemented. Intellectual curiosity must keep closer to scientific curiosity, and the capacity for dialogue must be related to collaboration between those who rely on experience and those who challenge it, those who rely on knowledge and know-how and those who keep aloof and question them with a view to improving them. But our previous comments are still valid, little is as yet known regarding tests capable of detecting these qualities, and practically all of them have yet to be devised. Our analysis offers a field of research rather than a range of methods.

Although the conditions of recruitment count comparatively little, it is of the greatest importance that the qualifications, attitudes or competence acquired during the training period should be maintained when the educator exercises his function. Initial training is undoubtedly essential and it is also true that it has provided and continues to provide the kind of qualities which are most likely by their very nature to stand up to the passage of time. However, care should be taken to ensure that the function performed does not prevent the exercise of these abilities but

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- 1) The researcher, for his part, must of course facilitate this training and interpretation by refraining from the unnecessary use of abstruse language or jargon understood only by initiates. But in this process of simplification there is a threshold below which he cannot descend without running the risk of distorting the nature and scientific implication of his discoveries.

evokes and fosters them and that the function is consistent with the training. Once again we confirm the importance of continuing training and its relationship to the initial training. After acquiring a taste for information and learning how information should be handled during his initial training, the serving teacher must have the time and the means to collect it. Furthermore, it must be incorporated into activities of educational renewal. Teachers cannot engage in these operations on their own ; not only because they need to be aided and advised despite their initial training but because the operations cannot be isolated nor conducted without the approval and support of those whose higher position in the chain of authority requires them to assume their share of the work and the responsibility. Here, emphasis must be laid on the essential part which might be played by headmasters and particularly inspectors if they added to their administrative and supervisory functions the task of promoting new schemes. It is obvious that the emergence of men capable of fulfilling these functions can be facilitated by the way they are initially recruited and trained.

2. In relation to the multi-dimensional model

All those recommendations would remain valid and might even acquire greater value if the "multi-dimensional" model were to be preferred to the "linear" model. But there are also other recommendations which we now propose to consider.

On this assumption, the line of demarcation between researchers and educators is much less pronounced. The model is based on the idea that individuals, particularly children or adolescents, can be the prime movers in their own learning provided they are in a favourable situation, i.e. motivated by tasks and objectives which they themselves have fixed, and that they can at least to some extent structure their behaviour spontaneously in the required way and intuitively and progressively discover the bodily attitudes, the sequence of gestures and the sequence of ideas most appropriate to the acquisition of the new abilities.

If this assumption is accurate, and it has been at least partially verified, it is clear that the careful and continuous observation of pupils under instruction is of great importance and represents one of the essential factors in scientific research. The value of these observations is twofold and their necessity is obvious from two points of view. First, they act as a kind of leaven in the formulation of research assumptions from which innovations are expected to emerge, and secondly they are essential for

the verification of these assumptions and the determination of the circumstances likely to convert research results into teaching innovations and necessary for their consolidation and dissemination. This analysis has two important consequences.

In the first place the new and exceptional importance attached to observations made under actual teaching conditions gives the teacher who records them a new and exceptional function in the innovation process. But this training must have made him capable of these observations, for their value depends not only on the place and the circumstances in which they are carried out but just as much on the way in which they are recorded.

In the second place innovation in relation to research gains in specificity and value. First, it is clear that whatever the prior research and whatever the results obtained, the innovation introduced and the observations made in this connection are necessary for the total solution of the problems which the researchers have legitimately endeavoured to solve and have indeed partially solved by other means. Finally, the innovation which has been conceived by the educators and tried out in their teaching becomes necessary for the discovery of the basic data and the actual formulation of the problem which the researcher will endeavour to solve by constructing appropriate assumptions.

CONCLUSION

INNOVATION AND PARTICIPATION

These two consequences naturally prompt us once again to draw attention to the importance and specificity of the training which lays emphasis on research and co-operation with researchers. But above all it enables us to show that innovation in an educational system depends not only on the recruitment and training of its exponents but also on the way their function is conceived and their status and condition defined. It is in fact obvious from the foregoing that innovation would be difficult if it were imposed or merely imported from outside and the educators merely had to put it passively and submissively into practice. One of the objectives of the new training would be to prepare a type of educator who would be accorded the right and the means to innovate, and this objective would not only be consistent with all the others but would be their confirmation.

Admittedly, such rights and facilities cannot be granted exclusively and without supervision. On the contrary, it is essential for all educators to be associated with the innovation and

that they should all feel that they are to a varying degree responsible authors, particularly as their training itself will be completely new. Educators thus trained in the spirit of innovation who have consented to make the intellectual efforts enabling them to understand why innovation is necessary and give them the faith and the will for it, are in all respects worthy of really participating in it. But however much these powers may be justified by attitudes, competence and merit, they are necessitated by the demand for efficiency. We have already said that innovation would overcome routine and conservatism if educators were inspired with the will and were given the means, primarily intellectual and moral. In conclusion we would say that if the educator is to strive after innovation and be able to disseminate it successfully, he must be regarded as and feel himself to be not a submissive servant and a docile agent but an indispensable participant. In education as in all other fields the essential basis of innovation is participation.

IX

THE TRAINING AND RECRUITMENT OF TEACHER TRAINERS IN SWEDEN

by

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SUMMARY OF KEY ISSUES

By way of introduction and with the situation in Sweden as our starting point, a classification into different categories is made of the personnel who, to a greater or lesser extent, are responsible for teacher training. The classification is as follows :

- Group A : Teachers responsible for initial training and employed at teacher training institutes - about 2,000.
- Group B : Continued teacher-training consultants, employed on a half-time basis at the county boards of education. They work in continued teacher training - about 250.
- Group C : Teachers at the experimental and demonstration schools - about 700.
- Group D : Supervisors of student teachers in teaching practice - about 11,000.
- Group E : Senior teachers - about 20,000. Headmasters and directors of study - about 3,300.

Only for groups A and B are special qualifications required, but these are quite vague and general. Nor is there any special "examination" for teacher trainers. It is important that there be special courses for teacher trainers, but these should not be compulsory. The "special qualifications" which enable an "ordinary" teacher to be appointed as a teacher trainer often consist of work with pedagogic experimental activity, pedagogic authorship (above all of teaching materials), participation in continued training courses, and personal suitability, e.g. ability to make contact with other people.

The State grant to continued teacher-training in Sweden has increased very swiftly in the past 10 years. The demand for continued training is, however, greater than the availability of resources. In the list of priorities which must be made, those who are themselves occupied with teacher training should have precedence. If the teacher trainers themselves are not completely up-to-date, serious consequences may ensue. Difficulties in implementing changes and reforms in the schools are on the increase.

As regards training opportunities, the greatest attention is devoted to groups A and B. There is a special conference routine which up to now has provided two-day conferences annually "for self-training" for these groups. At the present time we are working to set up a compulsory one-week course every year for these teacher trainers. Teachers with different sorts of teacher-training experience should thus come together on such a course, so that integration may be achieved.

Teacher trainers have precedence for the voluntary holiday courses in the summer ; a total of some 8,000 teachers usually takes part in these courses. Apart from the general courses, there are others which are organised solely for teacher trainers, e.g. courses for supervisors. During the academic year, courses are often arranged for senior teachers by the county boards of education. Courses are also organised for headmasters and directors of study, both during the holidays and in term-time.

There must be co-operation between continued teacher-training and work in pedagogic experimentation and development. Continued training should convey the results of work in pedagogic experimentation and development to the teachers "in the field". But it should also stimulate the teachers to carry out their own experimental activity and bring the result of their work on to the scientific, pedagogic institutions for further development.

INTRODUCTION

DIFFERENT CATEGORIES OF TEACHER TRAINERS

The above title refers to "personnel in charge of education, pedagogical counselling, and the management of the teaching force in Sweden". By way of introduction we should determine more precisely what type of personnel we shall consider in this report - or, in other words, which officials we have in mind when we henceforth use the term "teacher trainers".

In the first instance we are concerned with teachers serving at teacher training institutes of different kinds. These teacher trainers, whether they deal with subject studies, methodology or pedagogics, have the task of giving the student teachers their initial teacher training. We shall refer to them henceforth as teacher trainers, group A. On the other hand, this group does not comprise teachers at the university who, with regard to subject studies, also instruct other students apart from those intending to become teachers. The total number of people in this category would be about 2,000.

Secondly, we are concerned with those personnel who assist in the continued education of in-service teachers. In Sweden we call these people "continued teacher-training consultants". They themselves work half-time as active teachers, half time (Wednesday afternoon, Thursday and Friday) as advisers to those teachers within the county where they have their own teaching posts. As continued teacher-training consultants they are employed at the county board of education, which is a regional State authority. In brief, their work consists of visiting colleagues, acting as leaders on courses and one-day schools, and producing study material for teachers. We shall refer to these continued teacher-training consultants as group B. The number involved here is only about 250 people, i.e. about 8 per cent of the previous group. Nonetheless, this group plays a very important role in the work of continued teacher-training in Sweden.

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Thirdly, we are concerned with teachers who work in the so-called "experimental and demonstration schools". Such school units are affiliated to 15 teacher training institutes in Sweden. Apart from their ordinary teaching function, the main task of teachers at these schools, in co-operation with the teacher trainers in pedagogics and methodology, is to participate in experimental pedagogic activity and developmental work, and give different kinds of demonstration lessons in order to actualise the teaching of pedagogics, methodology, and intensive subject study. They also act as supervisors to the student teachers for teaching practice within the teacher-training programme. We shall call this category of teacher trainer, which includes 700 people at the moment, group C.

The next category comprises those teachers who act as supervisors to the student teachers, when the latter are posted to different schools to complete their teaching practice. These supervisors form group D in our outline. The number involved is estimated at 11,000.

Finally, to group E we would assign headmasters, directors of study, and senior teachers. This group is included among teacher trainers because, according to Swedish school regulations, one of their tasks is to promote the continued training of teachers. At a rough guess, the number of senior teachers is about 20,000 ; similarly the number of head masters and directors of study can be assessed at around 3,300.

The above categorisation shows that we have a whole succession of officials within the Swedish school system who participate in teacher training, whether the teacher training is to be seen as the only or the most essential task (groups A and B), or forms to a greater or lesser extent an integral part of other teaching and schoolwork.

From the grouping already outlined here it can be seen that when we talk about teacher training we are dealing with initial training as well as continued training. At the present time it would seem to be generally accepted in most countries that initial training is only the first stage in an educational process which must continue during the whole period the teacher is active within his profession. Another point is that most countries, including Sweden, have as yet had little time to proceed more than a short distance along the road towards the construction of an organisation and a system which would make it possible for every teacher to receive a lifelong education.

1. FORMAL QUALIFICATIONS FOR TEACHER TRAINERS - RECRUITMENT PROBLEMS

The outline covering the introduction of the concept of "teacher trainer" can with good reason be described as a broad one. Consequently it is difficult to find among the various regulations any specific rules which take into consideration the exact role of these teachers as trainers of other teachers or student teachers. There are no formal qualifications prescribed for either group B, D, or E, with regard to their task in teacher training. For group C, it is merely stated that at the time of appointment special attention will be paid to "suitability for the task of teacher-training" as well as experience of experimental and developmental work within the sphere of the school system.

However, even for group A which has teacher training as its sole task, the regulations about professional qualifications are in general terms and fairly vague. Apart from the obvious requirement that one should be competent and qualified to be a teacher oneself at the level or in the subject with which the teacher training is concerned, there are other requirements. The applicant should have proficiency over and above what is needed for his own examination, and knowledge which "is of importance for the post". He should also "have carried out particularly meritorious pedagogic work in the field which the post covers". There is also a regulation which states that the successful applicant will be the one who is "most suitable" for the type of teacher-training in question.

Similarly, for group A there are no precise qualification requirements, nor is there any specific examination for teacher trainer .

Let us at this point consider a pertinent question : is the lack of compulsory training or examinations for those teachers who wish to specialise in teacher training an advantage or a disadvantage ? Should there not at least be such training or examinations for groups A, B and C ?

The answer to the latter question is "no". No matter how well such training might be organised, it could never give a 100 per cent guarantee that the result would be excellent teacher-trainers. On the contrary, the risk would arise that people possessing good qualifications and qualities as teacher trainers, but without the formal "teacher-trainer examination", would nonetheless be excluded. This could easily lead to inflexibility and formalism when it came to the recruitment of teacher trainers, a state of affairs which would clearly serve no useful purpose.

This is not to say that special educational opportunities should not exist for different categories of teacher trainers, but merely that these training possibilities should not be compulsory. They should be available both before a teacher becomes a teacher trainer, and after he has taken up such a post ; and of course such training should be accorded a certain value as a qualification. Before we consider in a subsequent section the question of the need for special training for teacher trainers and the experiments that have already been made in Sweden in this respect, we shall briefly concern ourselves with the recruitment of teacher trainers. Let us first take a look at the most interesting group in this connection, group A.

What special factors are involved when an "ordinary" teacher is promoted to teacher trainer, for example, at a teacher-training college ? Here, as with other teaching appointments, the certificated degree of training skill naturally plays a very important part and, thereafter, the proficiency qualifications and number of years of teaching experience. But, apart from these factors (which we in Sweden have agreed to measure by a special points system which fully determines the filling of an ordinary teaching post), there are in this case other additional criteria of assessment. The "meritorious pedagogic activity", of which the regulations speak, may include participation in pedagogic developmental and research work, pedagogical authorship (often of teaching materials) and participation in either the initial or continued training of teachers.

To pinpoint more precisely the "extra qualification" which come into play is hardly possible. But clearly the headmaster of a teacher-training institute has much greater opportunity to exercise influence on the appointment than has the headmaster of an ordinary school. In neither case, however, is the headmaster the deciding factor. For an ordinary post the appointment is made by the controlling authority, which, for a teacher-training institute would be the National Board of Education, and for an ordinary school the County Board of Education.

What has been said here about group A also applies in large measure to group C. With regard to the continued-training consultants, group B, recruitment is based as a rule on the County Board of Education's personal knowledge of the teacher within the county. A teacher who has shown himself to be particularly interested in pedagogic and methodological questions, and who actively participates in continued-training activities of different kinds, will

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generally be selected. Evidence of personal suitability and the ability to make personal contact and create confidence is particularly important here, since the continued-training consultants have to work among teachers who are already active in the job and who have already acquired experience, opinions, and attitudes.

Personal suitability also plays its part in respect of the two groups of supervisors (C, D) and senior teachers (E). Because of the large number of teachers involved here, the possibilities of choice in the appointment have been fairly restricted, particularly in the small schools.

In Sweden, as in most other countries, there has been a shortage of teachers for the past 20 to 25 years. This has clearly had negative effects on the recruitment of different categories of teacher trainers. This shortage of teachers is now, however, coming to an end, and this will obviously increase the possibilities of engaging qualified pedagogues in teacher-training.

II. DO THE TEACHER TRAINERS NEED TO BE TRAINED ?

As has already been said, there is general agreement that a regular and systematic continued-training of teachers and other school personnel is an absolute necessity. In Sweden this has resulted in a notable increase in the State grant to continued teacher-training. In 10 years this grant has risen from about S.Kr. 2 million to S.Kr. 36 million for the fiscal year 1971-72. To this should be added the salary expenses of teachers during the compulsory one-day schools, when teaching in the schools is cancelled. This expenditure is estimated at about S.Kr. 45 million, making a total for national expenditure of S.Kr. 80 million so that the allocation to continued training is about 25 per cent of the total for teacher training (= initial training + continued training).

Nevertheless, the demand among teachers for continued training is far greater than available resources. In the list of priorities which has then to be made, it was natural to let those people who are themselves occupied with teacher training in some form have precedence over the "ordinary" teacher. Above all we have tried in recent years to stimulate and favour group A, teachers at teacher-training institutes. The reason for this should be crystal clear. If the teacher trainers in initial training were to impart out-of-date methods and attitudes in their own teaching, this would of course have long-lasting and fatal consequences for the whole school system.

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Information and changes have to be conveyed immediately (more quickly than in other cases) to the headmaster and staff of the teacher-training institutes, in order to reach the student teachers. The latter's training should clearly not already be out-of-date when they leave the teacher-training institutes. They should be in a position, by being well informed about the latest developments, to impart to the schools where they get their first post, fresh discoveries in the field of pedagogics and methodology. This is also in accordance with the spirit of the "Aims and Guidelines" for teacher training which apply at the moment and in which it is maintained among, other things, that teacher training should be "a stage in a continuing school reform". Other quotations from these "Aims and Guidelines", which are worth giving in this connection, are the following : "The interest of the students should be stimulated to follow pedagogic developmental and research work and continuously to renew, develop, and improve their teaching with regard to the progress and development of research".

"Initial teacher training should give a clear insight into the necessity of the teacher developing his ability to practice his profession by continuous training after his initial training". Clearly insight and attitudes of the kind the quotations express must also be exemplified in those qualified pedagogues who are appointed to train the teachers. When employing teacher trainers we should try to ascertain that this is so. But qualities of such fundamental value for the profession always need to be consolidated and developed. The teacher trainer is of course exposed to the same temptation as any other teacher, namely in his teaching to fall back year after year into old ingrained patterns and methods. Similarly, we should not be blind to the risk of stagnation ; this may occur because the teacher at an initial teacher-training institute has, as a rule, reached the final stage in his teaching career.

111. SWEDISH EXPERIENCE IN THE TRAINING OF TEACHER TRAINERS

a) Established conference routine for teacher trainers - groups A and B

The problem in offering continued training to those qualified teachers who make up groups A and B, is of course that they are supposed to be the most competent in the profession.

Who then is to give them further training ?

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The answer might be that they should learn and teach one another, according to the motto "steel sharpens steel". Such thinking lies behind the effort made in Sweden in recent years to create a system with set yearly conferences for both these groups. Until now these so-called "conferences for continued self-training" have been organised on a national basis. This means that, for example, all teacher trainers in foreign languages assemble from over the whole country every year for two-day talks and studies. At every one of the six higher teacher training institutes there is a special continued teacher-training department with the task of, among other things, arranging these conferences. Every continued teacher-training department has responsibility for a certain number of subjects and groups of teachers. In this way, for example, the continued teacher-training department at the Teacher Training Institute in Umeå is responsible for the teachers taking social orientation subjects, and the continued training department at the Teacher Training Institute in Malmö is responsible for primary school teachers.

A two-day conference per year and per teacher trainer is obviously not a great resource (and happily not the only one), but by careful planning and efficient utilisation of time, these conferences have proved to be of great importance as stimulants. By enabling teacher trainers to meet and inform each other of their experiences, experiments and ideas at well-planned conferences, these conferences, at their best, have created for the teacher trainers a kind of pedagogic development-project, which ought in any case to be the goal of all continued training activity. Of course the participation of qualified specialists from various areas, often university teachers, also occurs. However, from spring 1972 these conferences will be re-arranged on a regional basis and will be considered as a professional duty.

For teacher training purposes, the country is divided into six regions. Central to every region is a higher teacher-training institute. At such an institute, teachers at primary level receive all their training, and the majority of teachers at secondary level receive their one-year theoretical and practical training in methodology. In the near future, other types of teacher training will also be attached to these higher teacher-training institutes: primarily the training of pre-primary school teachers, teachers of purely vocational subjects, as well as domestic science teachers. We are thus on the way in Sweden to bringing together different types of teacher training and arriving, as far as possible, at an

integrated initial training for teachers. It is therefore natural that we should also want to create within continued training the possibility of gathering together the teacher trainers to discuss questions which are common to all categories of teacher, questions which break through and transcend the traditional borders between subjects and levels. Examples of such questions include all that concerns pupil welfare, the treatment of handicapped pupils and pupils whose performance is below average, marking and evaluation, the internationalisation of teaching, etc.

There is, in other words, a lowest common denominator for the role of the teacher and the teaching profession ; this common denominator is made up of components which are of interest to every type of teacher, components where study and discussion in heterogeneous groups should be stimulating and productive. This is why, in the future, we are going to organise the conferences mentioned above for teacher trainers on a regional basis and give them a comprehensively structured character. At the same time, however, we must guard ourselves against the danger, in an unwise integrational fervour, of creating artificial situations. There must always be opportunities for teacher trainers at the same levels and with the same subjects to meet for mutual discussions and studies.

There is obviously a need, however, for more time. With this in mind, the National Board of Education is currently working on the setting up of a whole week per year of continued training for all teacher trainers in groups A and B within a region. According to the plans, this training should take place in the spring, simultaneously in every one of the six higher teacher-training institute towns. For subjects in which there is only a small number of teacher trainers of the same kind, there will still have to be a possibility of holding conferences on a national scale.

Apart from the conference activity described above, there are also other types of conferences which are held regularly for teachers at teacher training institutes as well as for continued teacher training consultants. The purpose of these conferences, which concern only smaller groups, is primarily to analyse and specify continued teacher training requirements for different categories of teachers. These so-called "analysis conferences" form a stage in a yearly stock-taking of reported requests about continued training from teachers and teachers' organisations, though of course they also offer a worthwhile opportunity for the teacher trainers to discuss and exchange their experiences. A special

position is occupied by the two-day conferences commencing in the autumn of 1971 for heads of department at teacher-training institutes. These aim at creating contact and hence co-operation between the various teacher training institutes, with particular reference to courses of study and the production of teaching materials. These conferences will provide an annual contact on a national scale for all teacher-training institutes, in addition to the regionalisation of conferences for continued teacher training, as depicted above.

The teacher trainers in groups A and B also belong in many cases to the work groups preparing study material for teachers. This kind of work is clearly also productive and can be said to contain a kind of self-training.

b) Holiday courses for teacher trainers

Between 225 and 250 one-week, voluntary courses for teachers, headmasters and other school personnel are organised in Sweden every summer. About 8,000 people in all usually take part in the courses. Selection for most courses is made by computer. In this process, all teacher training groups A to E have a certain precedence over the "ordinary" teachers. Even if groups A and B seldom attend the courses as ordinary participants, attending instead as teachers or course leaders, these holiday courses involve a worthwhile and, as far as we can judge, effective continued training for the other categories of teacher trainers. The demand for places on such courses is appreciably greater than the number available at the moment, and of course it is in effect a disadvantage that teachers without a special function should have to stand on the sidelines. On the other hand, the number of places in courses would still not suffice for more than a small fraction of the total number of teachers in the country. It has therefore been considered more effective to concentrate on those teachers who have the most responsible teaching tasks and who can be expected to spread knowledge and ideas from the course to colleagues at home.

More important than the general holiday courses mentioned here are those courses which are specially geared to the needs of the different categories of teachers. Thus courses are organised every year for newly-appointed continued teacher-training consultants (group B), who in this way receive an initial training of about two weeks before they begin their work with the county board of education, which is their governing body. One-week continuation courses have also been organised in recent years for continued teacher-training consultants in the primary school.

In the summer of 1971, for the first time, some ten special teacher-training seminars were organised ; these lasted one week. The seminars, in which teacher trainers from groups A and B took part, were arranged so that different types of teacher training were represented. Each seminar had its special theme and the main objective was to draw up proposals as to how certain central components in initial teacher training should be carried out. Examples of such themes were : "The demonstration" ; a way of actualising pedagogic and methodological training" ; "Experimental work in teacher training" ; "The function of teaching aids in initial teacher training" ; as well as "Co-operative attitudes and positive relations in the school ; changes in the teacher's role with new demands on teacher training".

Participants were encouraged to take an active part in the seminars and were required to inform their own teacher-training institutes of the results achieved. The editing of material produced through these seminars has not yet been completely finished at the time of writing. According to the plans of the National Board of Education, a more regular training will begin in the summer of 1972 : this will take the form of two-week courses for group A. However, the exact extent of this activity is not yet clear.

Special training is also required for the important function of being a supervisor (groups C and D) to the student teachers during their practice periods. This training, too, is provided for the most part by one-week courses in the summer, and is primarily available to newly-appointed supervisors. The courses are intended, above all, to give information about the training the student teachers have already had when they come to the school where they receive their practical training, as well as to give insights into those psychological, pedagogical, and methodological questions which are part and parcel of the task of giving the student effective supervision.

All that remains is to mention the courses organised every year for headmasters and directors of studies, and held both during term-time and the holidays. These courses aim at stimulating and providing information about pedagogic developmental and research work, as well as at considering the headmaster's role as a trainer of personnel. It is above all in connection with the five annual one-day schools, which are compulsory for the teachers, that the headmasters, as well as the senior teachers, have a function to fulfil as teacher trainers. Unfortunately insufficient attention

has been paid to the possibilities of their playing an important part here as study leaders, due partly to their heavy work-load and partly to written instructions which are far too vague.

c) Other courses

Apart from the training opportunities described in the two previous sections, the courses organised by the regional state authorities, the County Boards of Education, for senior teachers during term-time and lasting for one to two days, should also be mentioned.

As was pointed out in the previous section, the senior teachers play a large part in the local one-day schools. At the moment, special study material is often used at these schools, material which forms the basis of the teachers' studies and discussions. However, in order to become really effective the one-day school needs a leader and it is here, in particular, that the senior teachers have an important task to perform. But unfortunately it is difficult to give them adequate training and information for this task, since they often have difficulty in securing leave from their own teaching duties to attend the courses organised by the County Boards of Education. Substitute teachers are generally needed to take their place, and this often gives rise to difficulties on the local authority's side since the latter is generally loathe to accept this extra expense. The school reforms of recent years have, in fact, considerably stretched the finances of the local authorities in Sweden.

CONCLUSIONS

CONTINUED TRAINING AND WORK IN PEDAGOGIC EXPERIMENTATION AND DEVELOPMENT

Work in continued training has long been characterised by a certain one-sidedness, in that the teachers at whom information has been specially aimed have played the part of passive recipient. But the teachers also need, if continued training is to be effective, to be convinced that they themselves have the possibility of influencing and guiding the training process in which they are involved. To express this quite simply, we can say that the teachers need to feel and be aware of themselves, not merely as objects, but just as much as subjects. Closer contact will have to be created between work in pedagogic experimentation and development, and continued teacher-training.

Incentives, ideas, and pedagogic experiments coming from teachers "in the field", even those of a modest nature, must be stimulated and utilised. It is here that a well-trained staff of pedagogic advisers, perhaps of the kind represented by the Swedish continued teacher-training consultants, have a very important task. They should thus be responsible for the two-way communication which must exist in order that developmental work can produce some effect, and not merely be experienced by the teachers as an alien product removed from pedagogic reality. The prerequisite, of course, is that teacher training has access to, and stands in close contact with, a scientifically functioning pedagogic institution.

X

TEACHERS AS PROFESSIONALS;
CURRENT CAREER PROFILES AND TRENDS IN THE UNITED STATES

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SUMMARY OF KEY ISSUES

American teachers are often described as semi-professional or quasi-professional workers, rather than full-fledged professionals. Important attributes of a profession - high levels of specialised knowledge and training, life-long commitment, and authority and autonomy in carrying out professional tasks, are attributed in which teaching is most often said to be lacking. Other factors believed to contribute to the less than full professional status of teachers are : the predominance of women, teachers' low socio-economic origins, and the low academic calibre of those college graduates who become and remain teachers. This paper examines these assumptions and discusses recent reforms in teacher education, and new teacher roles brought about by technological innovation and structural changes which may affect the professional status of teachers.

Although men constitute over one-half of all high school teachers, they remain a minority of all teachers because of the overwhelming proportion of women teaching in elementary schools. This is unlikely to change, nor would change be an unqualified blessing, since in the past, the ability levels and academic accomplishments of women teachers have been higher than those of men teachers.

Teacher training - especially at graduate level - is undergoing considerable change. Practical experience and internships are being emphasized; new programmes, such as MAT (Master of Arts in Teaching), are designed to attract well-qualified students, especially those who did not major in education as undergraduates, into elementary and secondary teaching.

Data on teacher turnover and commitment to teaching suggest that rates of attrition and dissatisfaction may not be as high as is often assumed. Once they have entered it, few teachers leave the education field. More seek positions outside the classroom, as educational administrators, planners, or counsellors, a career pattern common to other fields as well.

Early technological innovations - use of television, video-tapes, and programmed instruction - had little impact on the role of classroom teachers, partly because the instructional materials produced by manufacturers were seldom usable without considerable intervention and assistance by teachers. Team teaching similarly enhanced rather than diminished teacher roles. As the educational technology becomes more sophisticated and as many state and local school systems display increased impatience with slow pupil progress (especially among disadvantaged students) and growing concern about rising educational costs, there is a renewed effort to search for a "technological fix" and if possible, substitute "hardware" and "software" for manpower. Other innovations currently under consideration or experimentation were also introduced in the search for greater economy, efficiency and effectiveness ; they include performance contracting, voucher systems, accountability, performance-based certification, and differentiated or vertical staffing, all aimed at increasing student progress.

Teachers' unions and professional organisations object strongly to most of these innovations, seeing them threatening teacher autonomy and professional standards ; the concept of merit pay is also unacceptable. Differentiated staffing may become acceptable provided it is coupled with greater delegation of responsibility for certification and other administrative decisions to the teaching profession itself.

Teachers are coming closer to professional status than is often assumed. Improvements in training will diminish the gap between teachers and other professionals ; changes now under way in American higher education are likely to further contribute to a convergence in graduate study styles between education and other fields. Counter-trends are seen in the continued presence of a high proportion of women in the field, and in some current cost-cutting innovations. These pressures are also slowing down the trend for higher salaries, which had gained considerable momentum in recent years ; but this is believed to be a temporary phenomenon. The basic question remains the full professionalisation of the classroom teacher, whose role may be diminished as he or she becomes a technician supervised by higher echelon teachers and acting primarily as a dispenser of materials. In the light of developments to date, this outcome is considered less likely than the alternative ; a gradual full professionalisation of the classroom teacher.

INTRODUCTION

Are teachers or others whose occupation requires considerable training really members of professions ? There has been much discussion of this question in the past three decades - mostly among official spokesmen for elementary and secondary teachers, but also among sociologists and other observers outside the field of education. More recently, the role and status of teachers have been the subject of renewed attention because of the growing emphasis on educational innovation and experiments to restructure classroom practices and curricula. To improve and modernise elementary and secondary education, and to meet the needs of many students who are being inadequately served at present, new ways to train, assign, and reward teachers are being considered and tried. It would be premature to conclude, however, that these changes will be as rapid and widespread as hoped by their protagonists, or that all of them will automatically operate in the direction of making the teaching occupation more fully professionalised.

To arrive at some measurement of trends in professionalism, it is first necessary to agree on a basic definition of professional status. American sociologists, who have long been concerned with arriving at a valid and all-encompassing definition of the attributes of a profession, are generally agreed on some variant of the following list of five attributes : a body of systematic theory and generalised knowledge ; authority to carry out professional tasks and decisions ; community sanction or approval ; a basic service orientation, usually formalised in a code of ethics ; and a professional culture, maintained through formal organisations, institutional settings (for example, hospitals, universities) and informal colleague groupings (1). Of these, the existence of

1) See Ernest Greenwood, "Attributes of a Profession" in Sigmund Nosow and William H. Form, Man, Work and Society. New York : Basic Books, 1962. For a recent elaboration of these concepts, see Wilbert E. Moore, The Professions : Roles and Rules. New York : Russell Sage Foundation, 1970.

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a basic body of abstract knowledge and a basic service orientation are considered most central (1), although a definite measure of professional autonomy is also an essential attribute.

While there has been consistent agreement about the inclusion of some traditional occupations in the professional model (law, medicine, and the ministry are most often mentioned), the inclusion of other occupations, such as engineering, teaching (except at the university level), nursing, social work, pharmacy, and journalism, in the professional category has often been questioned, presumably because their practitioners did not possess one or more of the necessary attributes to the extent required for full professional status. Characteristically, these newer professionals or would-be professionals operate in an employee status in bureaucratic institutions, which curtail professional freedom as defined here. In the case of secondary and elementary teachers, the weakest areas required for full professional status appear to be in the area of training, where the existence of a distinct body of specialised knowledge indispensable for the practice of teaching is often questioned, and in the degree of authority or autonomy given the teacher for the actual performance of his task. As a result, the term quasi-professional or semi-professional is often used to characterise the status of teachers and others whose occupations are seen as almost professional, yet lacking one or more of the crucial attributes to the required degree. In practice, perhaps more important is the predominance of women in most of these occupations. Although none of the sociologists who have defined professional criteria list male membership as a membership requirement, there can be little doubt that in fact members of a predominantly female occupation could be assumed to lack a serious, life-long commitment to the occupational role. For a variety of historical, psychological, and sociological reasons, women have been less likely than men to develop attitudes favourable to professionalism (2). A comparison between the predominantly female

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- 1) Harold L. Wilensky, "The Professionalization of Everyone ?" American Journal of Sociology, Vol. 70, No. 2, September 1964, p. 140.
 - 2) For a comprehensive discussion of this problem, which includes some original data on teachers, see Richard L. Simpson and Ida Harper Simpson, "Women and Bureaucracy in the Semi-Professions", in Amitai Etzioni, The Semi-Professions and Their Organization. New York : The Free Press, 1969.

"human service" occupations - such as teaching, social work, librarianship, etc. - and the predominantly male engineering field suggests that the sex composition of the membership rather than lack of professional attributes, has played a crucial role. The professional status of engineers or men in other technical occupations is seldom questioned despite the fact that these occupations also are deficient in some of the professional attributes defined earlier.

Furthermore, for all human service workers and for teachers in particular, new obstacles to professionalisation have arisen from the quest for new qualifications which are said to be more important for successful performance than traditional "professional" attributes - such as non-cognitive or emotional qualifications, or membership in specific racial or social groupings (1).

The main purpose of this paper is to provide a factual assessment of the current status of the teaching occupation in the United States, to serve as a basis for speculations as to whether, as some have argued, it is on its way to becoming a true profession or whether as others predict it will retain its semi-professional or quasi-professional status (2). Partly as a consequence of broader social and technological developments, the teaching profession is changing in many respects. Most important are changes in its recruitment base ; the length and content of training ; retention patterns ; the structure of the work setting ; the definition of professional responsibility ; and the extent of participation in professional and trade union organisations. By examining the changes which are occurring in these areas, we may be able to make some judgments as to how far their combined impact will go in moving teachers in the direction of professionalism.

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- 1) For a discussion of this viewpoint see Susan Balloch, "Towards a Policy for the Professionalisation of Teachers", Paper XI of this volume.
 - 2) Moore sees the problem mainly in connection with teachers' strikes which lead to the withholding of services, a basic violation of professional norms. However, he leaves the question open, since physicians strikes have also occurred in recent years. (Moore, op.cit., p. 206). Etzioni, on the other hand feels that the semi-professions' aspirations to full professional status are unrealistic and recommends that these occupations "seek to improve their status rather than to try to pass for another". (Etzioni, op.cit., p.vii). That the professional model may be inappropriate for the teaching profession has not been suggested by these authors.

I

PERSONAL CHARACTERISTICS OF AMERICAN TEACHERS

When United States schools opened in the fall of 1971, a total of 2,360,000 elementary and secondary teachers were employed by local school systems to teach close to 52 million students (1). Most of the students and teachers were in the primary grades (kindergarten through grade 6), with a total of 1,308,000 teachers in these grades, as against 1,051,000 in junior and senior high schools (grades 7-12) (2). The 1971 estimates are generally in line with earlier projections, and represent an increase over comparable figures for 1970, although exact comparisons cannot be made because of variations in estimating procedures (3).

A. SEX

One of the persistent issues in United States education is the dominance of women in the teaching profession. As mentioned earlier, many observers feel that this imbalance hinders the more complete adoption of fully professional attitudes and behaviour patterns among teachers, since women are said to have a more marginal attachment to the profession and are also more compliant and less insistent on professional autonomy than men especially when

- 1) United States Office of Education, "Back to School Survey", Press Release, September 1971.
- 2) Statistics on this subject are inconsistent, because in some school systems the 7th and 8th grades are part of an elementary school and teachers in these grades and schools would be counted as elementary school teachers. Throughout the United States, the trend is however toward junior high schools (for grades 7 and 8, sometimes also grade 9) and the majority of teachers beyond the 6th grade are therefore counted as high school teachers.
- 3) For the school year 1970-71, the NEA reported a total of 2,039,891 teachers employed in United States schools, of whom 1,124,816 were elementary school teachers.

employed in bureaucratic settings (1). Furthermore, many experts feel that children should have male teachers, because they are often deprived of father figures in homes where fathers either are absent (especially in ghetto families) or spend most of their time at work or travelling (especially in more affluent families). Psychologists see the need for adequate male role models to insure optimal social and psychological development of all children, and especially of young boys. Although the number of men in American schools has been growing in recent years, the increase has been far from spectacular, as shown in Table 1. Overall, in 1970-71, just under one-third of all teachers were men. Men constitute a slight and stable majority at secondary school level ; at elementary level, there has been a very slight increase in the past three years, possibly as a result of military conscription policies, under which public school teachers who were employed in schools in poverty areas were deferred from military service. The improvement in teachers' pay rates and the diversification of career opportunities in the education sector also played a part.

Recent figures on students enrolled for advanced degrees in education also suggest that the present sex ratio of teachers will not change a great deal in the near future. As shown in Table 2, certain established trends persist : women slightly outnumber men in total enrolment in all sub-fields ; 78 % of the enrollees in the fields for the education of children are women (the major component of this category is elementary education) ; and men form a slight majority of the enrollees at the secondary education level. In the education fields aimed at training personnel other than teachers (in particular, administration, supervision, and finance), men constitute 78 % of the enrollees, which seems to indicate that now, as in the past, men see and seek opportunities in educational administration to a greater extent than women do.

Although additional data, not currently available, on the actual sex distribution of entering teachers are needed for a more solid forecast, it would appear that a drastic change in the sex ratio of American teachers cannot be anticipated, despite some efforts made in this direction. While the improvements in teachers' salaries have been sizeable to the point where entry salaries are competitive with those in other fields, it seems likely that elementary education will continue to be seen by men as an essentially

1) See Simpson and Simpson in Etzioni, op.cit., especially pp. 231-247.

Table 1

School year	Number of men classroom teachers			Men teachers as a per cent of classroom teachers		
	Elementary	Secondary	Total	Elementary	Secondary	Total
1960-61*	120,250	291,497	411,747	14.2	52.6	29.3
1961-62	127,177	309,398	436,575	14.5	53.3	29.9
1962-63*	129,161	326,670	455,831	14.5	52.8	30.1
1963-64	131,470	356,497	487,967	14.5	53.9	31.1
1964-65*	136,758	378,402	515,160	14.7	53.5	31.5
1965-66	148,473	395,295	543,768	15.2	53.7	31.8
1966-67*	148,024	417,315	565,339	14.7	53.5	31.6
1967-68*	152,102	437,880	589,982	14.6	53.5	31.7
1968-69*	162,948	460,524	623,472	15.1	53.3	32.1
1969-70*	169,635	482,951	652,586	15.3	53.7	32.5
1970-71*	175,548	491,784	667,332	15.6	53.7	32.7

* NEA estimate.

Source : National Education Association, Research Division, "Estimates of School Statistics, 1970-71".
Research Report 1970-R15. Washington, D.C. : The Association, 1970.

Table 2

**ENROLMENT FOR ADVANCED DEGREES BY SEX OF STUDENT AND FIELD
OF STUDY, FALL 1969**

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Field of study	Men	Women	Total
	Percentages		Number
Education - Total	45	55	234,042
Special Teaching Fields (including physical and health education)	51	49	39 85
Education of Children (nursery, kindergarten, early childhood, exceptional children, elementary educa- tion)	22	78	64,684
Secondary Education	51	49	17,285
Education, Administration, Supervision, Finance	78	22	23,433
Counselling and Guidance	49	51	29,348
Education, General	47	53	23,457
Education, all other fields	51	49	36,050

Source : National Center for Educational Statistics, Students Enrolled for Advanced Degrees, Fall 1969, Washington, D.C. : United States Government Printing Office, 1970, pp. 15-16.

female occupation, one which is unsuitable for most of them unless sex-typing of occupations becomes much less rigid than at present.

B. SOCIO-ECONOMIC BACKGROUND

Earlier studies of teachers have shown the majority to be of middle class and lower-middle class social origin ; compared to college graduates in other fields, education majors are more likely to come from lower-income families, and from rural or small town backgrounds (1). In past years, teachers' colleges were often cheaper and more accessible for this type of student ; more recently,

1) See for example, Ward S. Mason, The Beginning Teacher : Status and Career Orientations, Washington, D.C. : United States Department of Health, Education and Welfare, 1961, pp. 11-20.

the proliferation of junior colleges and branch campuses of State universities has provided more options for non-affluent students. However, teaching continues to attract many of these students because it offers job security and opportunities for administrative careers as well as important intrinsic rewards. Yet these generalisations conceal significant differences between male and female teachers, those of different ethnic backgrounds, high school and elementary school teachers, and those teaching in various types of communities. As a group, women who obtain a four-year college degree are of slightly higher socio-economic origin than male graduates, both because of motivational and economic factors. Women from non-affluent family backgrounds often aspire to white collar jobs for which a high school or two-year junior college preparation is adequate. Many of them see marriage as the main avenue to social mobility. Furthermore, families for whom a child's college education represents a true sacrifice are likely to favour sons over daughters when college-going decisions are made. In middle class and upper-middle class families, on the other hand, a college education, often initially without a clear vocational objective in view, is increasingly taken for granted for all children regardless of sex. Studies have shown that women who majored in arts and sciences tend to be of higher socio-economic origin than those who majored in one of the pre-professional fields (especially education and nursing) (1). However, as they progress or after they graduate, women find themselves increasingly channelled toward teaching careers, partly by inclination and interest, partly under the influence of counsellors and teachers, and partly because of the lack of visible, attractive alternatives. Thus, a follow-up study of a nationwide sample of 1958 college graduates conducted in 1963 showed considerable differences in occupational outcome for men and women. Even among those who had majored in academic fields other than education, women were much more likely to be teachers (Table 3). Perhaps most revealing are the findings of a very detailed analysis of recruitment to teaching obtained from a comprehensive longitudinal study of 1957 Wisconsin high school seniors who were surveyed in 1964. The survey showed that while nearly one-third of all women in the sample were of low socio-economic background, only slightly over 10 % of those who actually became teachers were drawn from this level - with girls from high

1) See for example, James A. Davis, Undergraduate Career Decisions. Chicago : Aldine, 1965.

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Table 3
UNDERGRADUATE MAJOR OF FULL-TIME EMPLOYED P.A. RECIPIENTS BY OCCUPATION

(in percentages)

Undergraduate Major	Number Employed Full-time	Occupation												Total Per cent
		Natural Scientist	Engineer	Social Scientist	Humanistic Professional	Health Professional	Teacher	Business and Managerial	Other Professional	Business Professional	Clerical and sales	Other Non-professional	No answer	
MEX														
Total	14,812	6.0	18.4	1.1	5.1	1.4	21.6	21.7	7.5	1.6	7.2	2.4	1.1	91.9
Natural sciences	2,146	25.4	10.8	0.7	1.0	21.9	20.6	6.0	5.3	2.2	3.4	1.8	0.9	100.1
Engineering	2,953	2.0	77.3	0.3	0.7	0.2	3.0	7.5	3.4	0.9	2.8	1.0	1.0	100.1
Social sciences	2,753	1.8	2.3	4.2	7.9	2.7	25.6	25.8	16.3	1.1	4.4	3.5	9.1	100.1
Humanities and arts	1,472	1.0	1.4	1.1	26.3	1.8	34.6	14.0	7.5	2.0	4.8	2.5	1.2	100.1
Health	286	5.1	-	-	-	87.1	4.1	0.3	0.7	0.7	2.1	-	0.7	99.4
Agriculture	417	35.7	1.4	1.2	1.4	2.9	15.6	11.0	9.1	2.6	7.0	10.3	1.7	98.9
Business and commerce	3,164	0.5	4.7	0.7	1.2	-	5.3	58.7	6.8	1.9	16.8	2.6	1.2	94.9
Education	1,345	2.4	1.9	0.7	2.5	0.8	75.9	4.3	5.0	1.7	1.7	1.9	1.1	99.9
General courses	76	5.3	10.5	-	3.9	14.5	43.4	6.6	10.5	1.3	2.6	1.3	-	94.9
DOMEX														
Total	4,134	1.2	0.3	0.7	5.3	6.2	67.2	3.6	6.2	2.8	4.2	1.1	1.1	99.9
Natural sciences	395	11.6	1.8	0.8	3.0	9.1	44.8	2.0	3.5	17.0	2.5	2.0	1.8	99.9
Engineering	23	-	17.4	-	-	-	52.2	4.3	17.4	-	8.7	-	-	100.0
Social sciences	622	0.5	0.2	3.2	6.4	2.6	55.8	6.1	14.8	1.9	6.3	0.8	1.4	100.6
Humanities and arts	884	0.1	-	1.0	14.0	0.3	63.4	3.8	4.2	0.5	8.9	1.6	1.1	99.9
Health	283	0.4	-	-	0.7	63.7	18.0	0.7	1.4	10.2	0.4	0.4	2.1	100.0
Home Economics	222	0.9	-	-	-	4.1	57.7	2.7	28.4	3.2	0.9	0.5	1.8	100.2
Business and Commerce	212	-	1.4	-	3.3	0.5	35.3	20.8	4.7	0.5	20.3	2.8	0.5	100.1
Education	1,667	-	-	-	2.6	0.7	90.8	1.4	2.6	0.1	0.5	0.7	0.7	100.1
General courses	27	3.7	-	-	-	14.8	66.7	-	7.4	3.7	-	-	3.7	100.0

Source : Laure M. Sharp, *Education and Employment : The Early Careers of College Graduates*, Baltimore : Johns Hopkins, 1970, p. 40.

socio-economic backgrounds constituting a large proportion of late recruits. The investigator concluded that earlier assumptions about teachers being predominantly of lower-middle class background needed re-examination, and that "teaching seems to attract women of high socio-economic background to a much greater extent than has been assumed" (1).

Not only are women teachers initially of higher socio-economic origin than men teachers ; their social status is probably further advanced through marriage. Although extensive, specific data are not available ; we can infer from census data that women college graduates are unlikely to marry men who do not have at least a bachelor's degree ; wives often have fewer years of education than their husbands. Thus, a married woman teacher of low socio-economic origin is probably the wife of a professional, technician, manager, or businessman, and enjoys the status conferred by her husband's occupation. Differences in the social origin and status of men and women teachers have important consequences for professional behaviour. For example, in a study examining teacher unionisation and militancy, it was found that 70 % of male teachers and 42 % of female teachers in New York were militant (as measured by attitude and behaviour during school strikes in the early nineteen sixties). Aside from feelings about the occupation - with teaching being a "better" job for women than for men - social class was seen as an important variable, since 60 % of the married women teachers were married to men in occupations with higher prestige and income than teaching (medicine, law, business). Thus, it is not surprising that 61 % of the men teachers in New York, as opposed to 47 % of the women thought of themselves as belonging to the working or lower-middle class (2).

In addition to sex and social class, race and ethnicity are important elements in a profile of the American teacher. For example, until recent years, Negro teachers were heavily drawn from the Negro middle class, since teaching was one of the few occupations which provided open access and employment for Negroes, although most often in segregated environments. In a small pilot study of Chicago high school teachers, significant differences in

- 1) Ronald M. Pavaiko, "Recruitment to Teaching : Patterns of Selection and Retention", Sociology of Education, Vol. 43, No. 3, Summer 1970, p. 346.
- 2) Stephen Cole, "The Unionization of Teachers : Determinants of Rank and File Support". Sociology of Education, Vol. 41, No. 1, Winter 1968, p. 78.

role orientations were found among teachers of different ethnic origins, with Negroes more "administration" oriented (for example, concerned with maintaining discipline, training students for jobs, seeking advancement by becoming a principal or other school administrator), Irish and Jewish teachers most "knowledge" oriented (concerned with subject matter, training students to become scholars, seeking advancement by teaching in college or advancing in academic fields) and Italian teachers most "student" oriented (concerned with helping and counselling roles, training socially well-adjusted students, seeking advancement by becoming counselors (1)). Although much more extensive research is needed before we can assess the impact of social class, ethnic or cultural traits on teachers' role orientations and professional behaviour, it is clear that the sheer fact of having over two million individuals of very different backgrounds involved in dealing with 50 million students in 35,000 highly diverse school districts with even more diverse characteristics makes all generalisations about the American teaching profession hazardous and inapplicable to many situations.

1) Mildred Kornacker, "The Ethnic Teacher in the Urban Classroom", Education and Urban Society, Vol. 1, No. 3, May 1969, pp. 247-264.

II

THE EDUCATION OF TEACHERS

The preparation of teachers has come a long way since the turn of the century, when the majority of teachers were graduates of normal schools, which they entered after 8 years of elementary training and attended for a relatively brief period - anywhere from six weeks to two years (1). Even as late as 1930-31, government statistics showed that 70 % of all United States teachers did not have a bachelor's degree. By contrast, in 1968-69, this was true of only 4 %. (See Table 4)

The proportion of teachers with master's degrees has increased in recent years, although as Table 4 shows the increase was not a steady one, probably because of the acute teacher shortage at times during the nineteen sixties. The most recent available figures on students enrolled in education suggest that the proportion of teachers with master's degrees will continue to increase (see Table 5).

Much of the controversy about teacher preparation centres not on the completion of degree requirements per se, but around student ability levels, academic standards and curriculum content. Critics of teacher training - who have been both numerous and vociferous in the past decade - have charged that low-ability and low-performance students are recruited into teaching, and that most undergraduate and graduate curricula are of poor academic quality and inappropriate for the needs of present-day elementary and secondary students.

The notion that teachers come from the lowest ability of the college population is both widespread and to some extent confirmed by research evidence, although the processes at work are rather complex. Education majors (who were found to be of lower academic

1) For a useful summary of the history of teacher education in the United States, see Charles E. Silberman, Crisis in the Classroom. New York : Random House, 1970, Part II : "The Education of Teachers".

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Table 4
DISTRIBUTION OF PUBLIC SCHOOL TEACHERS BY HIGHEST DEGREE EARNED, SELECTED YEARS

School year	All teachers			Elementary school teachers			Secondary school teachers			Percentages
	No degree	Bachelor's degree	Master's or higher degree	No degree	Bachelor's degree	Master's or higher degree	No degree	Bachelor's degree	Master's or higher degree	
1930-31	70.0	(----- 30.0 -----)		-	-	-	-	-	-	-
1937-38	40.6	43.3	15.1	-	-	-	-	-	-	-
1955-56	22.2	53.2	24.6	34.1	53.1	12.8	3.0	53.3	43.7	43.7
1960-61	15.4	61.9	23.5	23.8	62.2	14.0	2.3	61.6	36.1	36.1
1962-63	10.9	64.5	24.6	17.6	65.0	17.4	1.9	63.9	34.2	34.2
1964-65	8.6	67.3	24.1	15.1	70.8	14.1	1.7	63.5	34.8	34.8
1965-66	6.6	67.2	26.2	10.9	70.9	18.2	2.1	67.2	34.7	34.7
1966-67	6.1	68.2	25.7	10.3	72.9	16.8	1.5	73.0	35.5	35.5
1967-68	4.7	67.4	27.9	8.0	73.2	18.9	1.4	61.4	37.2	37.2
1968-69	4.5	65.2	30.3	7.8	71.1	21.1	1.1	59.1	39.8	39.8
1969-70	3.6	65.8	30.6	5.9	72.0	22.1	1.2	59.2	39.6	39.6

Source : National Education Association, Research Division, Teacher Supply and Demand in Public Schools, 1970, Washington, D.C. : NEA, 1970, p. 53.

Table 5
COLLEGE STUDENTS COMPLETING MASTER'S DEGREE, BACHELOR'S DEGREE AND TOTAL COMPLETING BACHELOR'S AND MASTER'S DEGREES,
1970 AND 1969, BY FIELD

	Bachelor's Degree			Master's Degree			Combined Bachelor's and Master's		
	1970	1969	% Change	1970	1969	% Change	1970	1969	% Change
Elementary Education	102,175	97,295	+ 5.0 %	12,215	10,325	+ 18.3 %	115,390	107,620	+ 6.3 %
Secondary Education	149,400	132,406	+ 12.8	18,402	16,346	+ 12.6	167,802	148,752	+ 12.8
Ungraded	9,973	9,210	+ 8.3	8,862	9,446	- 6.2	18,835	18,656	+ 0.96
Total	261,548	238,911	+ 9.5	39,479	36,117	+ 9.3	301,027	275,028	+ 9.5

Source : National Education Association, Research Division, Teacher Supply and Demand in Public Schools, 1970, Washington, D.C. : NEA, 1970, pp. 9-11.

ability than those who chose other fields), do not in fact constitute the bulk of teachers, especially at secondary level as we showed earlier. The real issue is selective attrition, both at the time of graduation (those who never start to teach) and after a few years of teaching. Special tabulations prepared for the Commission on Human Resources in 1968 from survey data collected by the National Opinion Research Center showed that graduates who entered teaching had lower grades in college than those who entered other occupations. Once in teaching, the better students among the men left the field ; this was not true of women, especially of those who were married, and of those who taught in secondary schools.

The previously quoted Wisconsin study had some data on measured intelligence, as well as college grades. It was found that women who ranked in the lowest third were under-represented while those in the highest third with respect to measured intelligence were over-represented among those who became teachers. "Late recruits" - those who did not originally plan to become teachers - were more often drawn from the highest intelligence group. Attrition, however, was higher among the most intelligent than among those of lower intelligence (1). In summary, available data suggest that the teaching field is recruiting higher quality women than men ; among men apparently recruits who were the best students leave the profession at the highest rate ; among women the attrition picture is less clear. The schools face a real problem, therefore, in achieving the simultaneous goals of recruiting more men and more high-ability teachers, which many see as necessary pre-conditions for the achievement of professional status.

It should be pointed out that the figures currently available and quoted here are relatively old ; some of the developments in recent years may well have led to more interest in teaching among high-ability students. Many college observers report a lessening in interest in the hard sciences on the part of bright students and more interest in people-oriented fields. Thus, the Peace Corps and the Teacher Corps were able to recruit able young people for teaching jobs (2).

1) Pavaiko, op.cit., p. 349.

2) New data on the teaching interests and activities of college students and recent college graduates will be available from a study being conducted for the United States Office of Education by the Bureau of Social Science Research in co-operation with the American Council on Education.

Table 6

**ACADEMIC PERFORMANCE INDEX OF PERSONS WHO STAYED IN TEACHING OR
WHO LEFT WITHIN THREE YEARS,
by sex, family status, and level of teaching**

Sex and Family Status	Elementary		Secondary	
	Quit	Never quit	Quit	Never quit
Men	1.47	1.37	1.68	1.52
Single Women	1.78	1.65	1.82	1.86
Married Women, no children	1.67	1.70	1.90	2.03
Married Women, with children	1.79	1.87	1.96	1.88

Source : Special tabulations from NORC 1961 survey and follow-up of college seniors. The Academic Performance Index is a measure based on grades adjusted for differences in college selectivity. It has a range from a low of 1.0 to a high of 3.0. Cited in John K. Folger, Helen S. Astin, and Alan E. Rayer, Human Resources and Higher Education. New York : Russell Sage Foundation, 1970, p. 112/.

The impression conveyed by a persistent folklore, as well as a recent avalanche of books and articles highly critical of the American school system is that one of its great uniform weaknesses lies in the area of teacher preparation : teachers are required to take too many courses in educational methods and are poorly prepared in subject matter areas. While this may have been the case twenty years ago, when specialised teachers' colleges played an important role in teacher preparation, and may still be true in some states, it is simply not an accurate description of the most prevalent situation (1). The preparation of teachers takes place predominantly in public colleges and universities. According to a nationwide survey of entering freshmen in 1967, close to half of all freshmen at public four-year colleges were planning to become elementary or secondary teachers ; after the first year, when some attrition had already taken place, the proportion was still very high, with 17 % of the men and 53 % of the women

- 1) The American educational system is a truly decentralised one, with each state having almost autonomous teacher training and certification procedures, often with further requirements at the local school district level.

choosing this occupation (1). Fewer than half of these students planned to be education majors, and most of these were future elementary school teachers. "Students planning to teach at the secondary level typically major in an academic subject... Thus teacher education is a major responsibility of the academic departments of most colleges and universities, and not just their schools or departments of education... Whether the students major in education or in an academic subject they take the bulk of their course work - as a rule 2/3 to 3/4 - in the academic departments... Thus, if American school teachers are poorly educated, it is the liberal arts professors, not just the educationists, who are to blame." (2)

Certification requirements may at times specify additional education courses, but again there is great variation by states. Averages for the United States are 19 semester-hours of professional education for elementary school teachers and 14 semester-hours for secondary teachers (out of a total of 120 semester-hours, which usually constitute a four-year college programme), although some states require as many as 30 and 24 hours for elementary and secondary certificates, respectively (3). Student teaching is usually an additional requirement.

The content of teacher education courses and the amount and quality of the student teaching experience are more important and more controversial because they are one of the major determinants of professionalism. Much of the current discussion about teacher training and many of the reform proposals centre on this area. Low academic standards are said to prevail, especially at the graduate level where masters' programmes often are completed on a part-time basis and by students unqualified for graduate work. There is little doubt that both at the masters and doctoral levels,

- 1) American Council on Education - Office of Research, "The First Year of College : A follow-up Normative Report", Research Reports, Vol. 5, No. 1, February 1970. It should be noted that many of these four-year public colleges are former teachers' colleges, only recently reorganised as general four-year colleges as a result of the growth of state education systems. The extent to which faculties and curriculum have been expanded varies, of course, but in many states the change has been considerable.
- 2) Silberman, op. cit., p. 377.
- 3) Massachusetts Advisory Council on Education, Teacher Certification and Preparation in Massachusetts, Report Number 1 : Status, Problems and Proposed Solutions. Boston : Massachusetts Advisory Council on Education, June 1968.

graduate programmes in education have rarely been as selective and rigorous as those in the arts and sciences or those offered by professional schools, especially medicine or engineering. The system of national fellowships and assistantships, and the presence of high calibre research programmes which in other fields created a cohesive full-time academic milieu for students and teachers never was achieved in the field of education. Schools of education oriented to the needs of their state systems have been predominantly parochial institutions, dependent of state and local support as well as tuition payments borne by school systems to upgrade and certify local teachers. In recent years, however, the major universities, with encouragement from private foundations and from the federal government, have made considerable efforts to upgrade these graduate programmes. The principal innovation was the introduction of high quality, full-time programmes, leading to a new master's degree, the MAT (Master of Arts in Teaching), specialised by subject matter field and designed to prepare well-qualified students for both elementary and secondary schools. To date, the programmes are still relatively small, but their impact on other graduate programmes in education may prove to be significant (1).

One of the characteristics of the newer degree programmes such as the MAT, as well as one of the reforms recommended for existing programmes, is a heavier emphasis on internships or "clinical" experience. There is much interest in bringing the future teacher - as well as the professor in the education departments - into closer contact with the elementary and secondary school and with other elements of the larger community within which the teacher must function. Much of this emphasis is a consequence of the urban crisis in the United States, and the discovery that existing educational approaches and practices have been especially inappropriate for teachers of racial minorities and other disadvantaged students. The introduction of technological innovations, many of which are designed for student self-use, require different patterns of teacher activities in and out of the classroom. Increasingly, teachers are taught to become diagnosticians rather than dispensers of group instruction ; they learn to select appropriate materials for individual children who then

- 1) Preliminary data from "A Survey of Graduate Students" conducted by the American Council on Education and the Carnegie Commission on Higher Education showed the following degree enrolments among graduate students in education : M.A., 58 % ; MAT, 8 % ; Ph.D., 7 % ; Ed.D., 9 % ; other, 10 %.

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learn by themselves or in small groups, often with the assistance of technological devices. There is also increasing recognition that during their training phase new teachers need better information and behavioural guidance in dealing with the very complex attitudinal and emotional stresses which they experience, especially in the inner city schools. Many new and imaginative teacher education programmes are being launched in diverse communities ; their common characteristics are longer and more intensive internship programmes, under which a young teacher receives continuous professional supervision and guidance and experiences a better, more gradual transition towards his first responsible teaching job (1). Many of these programmes are structured so as to involve older, experienced teachers - the current classroom teachers, principals, and supervisors - to a much larger extent in actual training activities than was traditionally the case in student-teaching. This has the additional advantage of providing a form of in-service training for experienced school personnel who, despite much lip-service to this concept, are seldom exposed to systematic in-service training. Systematic research data in this area are non-existent, and it is therefore difficult to judge the extent to which there has been change or progress. From impressionistic data and the presence of continued criticism, it would appear that the occasional one-or two-day workshop is basically the only widespread activity in this area ; only for some specialised high-school teachers, most often in science and mathematics, were there more extensive programmes, usually sponsored by the National Science Foundation in the form of summer workshops, but even these have failed to reach more than a minority of teachers. Some in-service training is carried out through teachers' professional associations, rather than school systems or universities. This is potentially perhaps the most promising development, but in this area, too, the absence of data precludes assessment at present.

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- 1) For provocative new proposals and ideas, see for example B. Othanel Smith, Teachers for the Real World, Washington, D.C. : The American Association of Colleges for Teacher Education, 1969. See also, Silberman, op.cit., for descriptions of on-going innovative programmes in teacher education, especially a programme at the New School for Behavioral Studies in Education at the University of North Dakota and the Bank Street College of Education Program in New York.

III

COMMITMENT TO TEACHING

Are teachers less committed to their occupation than other professionals ? This is a frequent assertion, based on the much publicised turnover experience of many schools and school districts. Women are believed to teach only for a few years, usually until they marry or have their first child ; men are said to remain in teaching only until they can find a more lucrative or more prestigious job.

It is difficult to provide hard and fast answers to settle these issues, since we really have no norms as to what constitutes high or low turnover in professions in general. It is true that women teachers seldom continue to work when they have small children, but this is true of most college-educated women in the United States with the possible exception of a very career-oriented minority most often with a PhD or medical degree. Actually, the data we have on single women and on men suggest that retention in the teaching field, satisfaction with teaching careers, and commitment to the field are probably not much lower than they are in other professional fields (for example, law and medicine). Thus, in the previously quoted study of college graduates, 80 % of the men who were teachers in 1960 were also teachers in 1963 ; the same was true of 84 % of the engineers (1).

A survey conducted by the National Education Association for the school year 1965-66 showed the following median years of teaching experience for different age groups :

Under 30	3.0 Years
30 - 39	8.0
40 - 49	14.0
50 and over	25.0

1) Sharp, op.cit., p. 71.

When teachers in this same survey were asked if they would want to become teachers again if they had a chance to start over, the great majority answered yes ; this same question had been asked in three earlier NEA surveys and the trend seems to point toward greater commitment in more recent years, as the following figures show (1) :

	Would certainly or probably teach again
1944 Survey	64.2 %
1956 Survey	73.3
1961 Survey	76.8
1966 Survey	78.0

Of course, the commitment of those who stayed in the profession is only one side of the story ; the real issue raised by those who question the retention power of teaching are alleged high turnover rates. Here it is necessary to make several careful distinctions. As Table 7 shows, American teachers change jobs frequently by moving from one school or school system to another, usually in search of better working conditions, such as less crowded classrooms, fewer problem students, or higher pay scales. These job changes contribute to the impression of an unstable profession, but they obviously do not reflect an unstable commitment to a teaching career. It is more difficult to assess the fairly frequent moves out of classroom teaching into other education-related occupations, such as school guidance, counselling, or school library work, or various supervisory positions, such as principal or curriculum specialist. However, moves away from practice into administrative positions are part of a normal career line in many occupations ; physicians become clinic administrators, engineers and lawyers become management executives. Teachers, faced with a lower career ceiling than other professions, may be more likely to seek advancement by moving into non-teaching careers in the educational field, a situation which is in part responsible for current attempts at restructuring teacher roles through hierarchical systems to provide greater career opportunities for classroom teachers. In the absence of comparable data from other professions, it is difficult to make a judgment whether movement out of teaching - into both related and unrelated occupations - is high or low, but figures from a recent survey conducted by the

1) National Education Association - Research Division, The American Public School Teacher 1965-66, Washington, D.C. : National Education Association, 1967, p. 50.

Table 7
NUMBER OF SEPARATIONS AND REASONS - U.S. PUBLIC SCHOOLS FALL 1968-FALL 1969

	Total		Elementary		Secondary	
	N	%	N	%	N	%
Total number of teachers, Fall 1968	1,465,416	100.0	960,914	100.0	787,044	100.0
Total Separations (1)	358,913	19.1	102,408	20.1	133,302	18.5
<u>Separations not resulting in loss to profession</u>	187,814	10.0	101,007	10.6	75,836	9.7
For other school:						
Same district	76,973	4.1	46,554	5.0	25,185	3.2
Other district	110,839	5.9	53,453	5.6	50,651	6.5
<u>Separations from the teaching profession</u>	171,101	9.3	90,941	9.5	68,639	8.7
Leave of absence	21,822	1.2	12,561	1.3	8,176	1.0
Non-teaching job in educational field	12,331	0.7	5,221	0.5	6,673	0.8
Job outside educational field	23,719	1.3	8,261	0.9	13,630	1.7
Retired	31,597	1.7	18,079	1.9	10,694	1.4
Deceased	3,684	0.2	2,133	0.2	712	0.1
Other known reason (2)	53,826	2.9	34,957	3.6	18,447	2.3
Reason unknown	12,673	0.7	5,598	0.5	6,533	0.8
No explanation	11,439	0.6	5,131	0.6	3,754	0.5

1) Number of full-time teachers separated from the schools in which they taught between Fall 1968 and Fall 1969.

2) Women who are known to have left teaching to become housewives are included in this category.

Source: U.S. Office of Education, National Center for Educational Statistics (unpublished data from school staffing survey, Fall 1969).

United States Office of Education and shown in Table 7 suggest that that actual losses to other occupations are rather low, with less than 1 % of elementary teachers and less than 2 % of high school teachers in a given year, leaving for work outside the field of education.

The biggest loss is of course caused by the withdrawal of young women teachers who stop working in order to raise their own families. Many of them return when their children are of school age. For 1969, the proportion of re-entrants was estimated to be about 3 % of all teachers (1). If the current interest in facilitating employment and further education for women persists, it is likely that better part-time study and working arrangements and expanded child care facilities will reduce the withdrawal rate of women teachers, facilitate re-entry, and thus further reduce true teacher turnover rates.

1) Re-entrant figures from Teacher Supply and Demand in Public Schools, 1969. Washington, D.C. : National Education Association, 1970, p. 28.

IV

RESTRUCTURING TEACHER ROLES

Although there has been considerable discussion and small scale experimentation in the past decade for the purpose of re-forming and restructuring American elementary and secondary schools, few basic changes have occurred to date which have affected large numbers of teachers (1). New technological devices - television, videotapes, and programmed instruction - were generally adapted to classroom use by the classroom teacher, perhaps with the assistance of an audio-visual or technology specialist who served an entire school or school district. Although there had been considerable agitation about teachers being displaced by computers, initial experiences with computer-assisted instruction dispelled these fears, partly because the instructional materials produced by manufacturers were seldom usable in the classroom without considerable intervention and assistance by the classroom teacher. Thus, an earlier prediction made by two sociologists that the widespread use of new educational media will on balance improve the status of teachers rather than depress it seems to be borne out (2) - not primarily because of greater specialisation and new roles in connection with media use, such as planner, script writer, actor, consultant (although this has happened occasionally) but simply because the media have not achieved the needed level of sophistication and versatility.

Team teaching - which was treated as a major novelty and has become widely accepted - also does not change the teachers'

- 1) For a comprehensive discussion of the reasons for the slow pace of acceptance of innovation in American schools, see Leila Sussman, Innovation in Education, United States - Technical Report, Centre for Educational Research and Innovation, OECD, Paris, June 1971.
- 2) Bruce J. Biddle and Peter H. Rossi, "Educational Media, Education and Society", in The New Media and Education, ed. by Peter H. Rossi and Bruce J. Biddle. Chicago : Aldine, 1966.

responsibilities or professional status in a significant way, although insofar as it makes each teacher a little more of a subject matter specialist, it may close the gap between the usually more specialised (and therefore more professionally oriented) secondary teacher and the elementary teacher. In general, the new emphasis on the importance of early childhood education, especially for the disadvantaged, and innovations which have been introduced in the elementary schools - such as specialised programmed reading and new maths - have probably resulted in somewhat higher prestige for the elementary school teacher, who was traditionally less highly educated and more locked in by prescribed curricula and close supervision than the secondary school teacher.

The prospect of utilising educational innovations and hardware to a greater extent in the near future now that better materials are apparently being produced by the many firms competing in this new industry has led to a revival of interest in structural innovations of the kind feared and opposed earlier by teacher groups. These arise from the need to stabilise ever-rising educational costs and to speed up progress in student performance - especially among disadvantaged students - which to date has been found disappointing. Many of the innovations which receive a great deal of attention at present have important implications for the status of the teaching profession. Most of them can be summarised as new ideas in the search for greater economy, efficiency, and effectiveness in education (1). The most important of these are : performance contracting, voucher systems, teacher accountability, performance-based certification and differentiated or vertical staffing. They represent in effect the culmination of efforts under way since the sixties to improve "education productivity", the amount and kind of learning that is accomplished within the schools, both among bright students, and more recently, among the disadvantaged. Efficiency and "out-put oriented" measures are believed most conducive to spur the tradition-bound and bureaucratic educational establishment into action and to speed up the adoption of technological devices and other innovations (2).

- 1) For a good summary of the current key concepts as seen from the union perspective, see AFT Quest Paper No. 10, Dr. Robert D. Bhaerman, "New Currents in Education : A Preliminary Review", Washington, D.C. : American Federation of Teachers, August 1970.
- 2) For a comprehensive discussion of these issues and their implications for the status of teachers, see Martin Trow, "The New Media in the Evolution of American Education", in Rossi and Biddle, op.cit., pp. 329-348.

Among the efforts toward achieving greater cost-effectiveness, the most highly publicised are "performance contracts" between private firms and a local school. Under these contracts, a private contractor guarantees a certain rate of progress for students (for example, to raise reading skills) to be measured through periodic objective tests, with an incentive payment feature built into the programme: the contractor, as well as the instructors employed by him, are paid bonuses for exceptional results.

Various types of performance contracts have been funded by the Office of Economic Opportunity and the Office of Education and are currently under way in 21 school districts; many others are under consideration. Most of these rely heavily on educational technology (computerised instruction) to meet their objective. In other communities, which have not gone so far as performance contracting, the ideas behind the performance contract have raised considerable interest. Here the teachers are given a more active role and direct rewards for superior student performance. In Washington, D.C., the school board was anxious to build a "performance reward" feature into teacher contracts, with premium pay given to teachers whose students' gains surpassed those achieved by others of comparable ability. The teachers' union vetoed the plan. But in other cities, experiments along these lines are under way; teachers at an elementary school in Portland, Oregon, were organised into teams; each team received a \$1,000 stipend and competed with other teams for bonuses for teaching success.

There has been considerable objection from teachers and teacher organisations to some of the more publicised performance contracts and to the concepts of rewarding teacher effectiveness. The issue of merit pay - a concept traditionally opposed by trade unions in all fields, and one which teacher organisations find especially objectionable because of its unprofessional overtones - has been raised most consistently. Thus, in 1962, the AFT's Conference on Merit Rating concluded that merit pay is "a device leading to educational 'ward-heeling' among faculties and that it fosters confusion, friction and ill will among staff members". There are other serious objections to it, as well. For example, if performance is measured by objective tests, this encourages poor teaching directed at "test passing" rather than cognitive learning. The AFT, describing performance contracting as "huckstering", came out with a statement urging that it be stopped. The NEA, at its annual meeting in 1971, expressed concern and urged that only under contracts where local teachers would have a strong planning and participatory role should it be approved.

A related issue is that of teacher accountability which is often couched in innovative terms, but like performance contracting, stems from the feeling of school boards that there is insufficient pay-off from the funds invested in education, partly because of inadequate teacher utilisation or performance. More stringent periodic reviews of teacher performance - usually but not exclusively measured through student performance - would lead to more rigorous retention, promotion, and certification criteria, instead of the current practice of automatic retention and promotion based on longevity or the completion of not very demanding graduate level courses.

The second major innovation involves changes in staffing patterns, usually in the form of differentiated staffing on the pattern first introduced in Temple City, California, recommended in a widely noted report by the Massachusetts Advisory Council on Education and introduced in partial or modified form in several states (Maryland, Florida, Washington, Wisconsin). Under these plans, there is a three, four, or five level teacher hierarchy, with the bottom rank held by a paraprofessional or technician, who usually does not have a college degree, and the highest rank held by a master teacher, who may hold a doctorate or equivalent. The Temple City model is shown in Table 8 ; the Massachusetts model has only four levels : educational specialists, professional teachers, associate teachers, interns or paraprofessionals. Their functions are defined as follows :

"Included among Educational Specialists may be high level classroom teachers and professionals from cognate fields such as sociology and psychology as well as supervisors, counselors and administrators. Professional Teachers or Educational Specialists will be responsible for professional planning and decisions, although advanced Associate Teachers may take some such responsibilities. Interns will rotate through the range of teaching responsibilities. Paraprofessional personnel will perform various non-professional tasks within the instructional team." (1)

There are two advantages claimed for differentiated staffing by its advocates. With the use of individualised instructional materials, this system would provide staff flexibility ; more

1) Massachusetts Advisory Council on Education, op.cit., pp. 40-41,

Table 8
TEMPLE CITY MODEL (1)

		Nontenure	
		Master teacher	
		Doctorate or equivalent	
		Nontenure	
		Senior teacher	
		M.S. or equivalent	
Tenure	Tenure		
	Staff teacher		
	B.A. degree and state credential		
Associate teacher			
A.B. or intern			
100 % teaching	100 % teaching responsibilities	3/5's staff teaching responsibilities	2/5's staff teaching responsibilities
1-10 months	10 months	10-11 months	12 months
Academic assistants, A.A. degree or equivalent			
Educational technicians			
Clerks			

1) AFT Quest Paper No. 6, David Selden and Robert Bhaerman, "Instructional Technology and the Teaching Profession". Washington, D.C. : American Federation of Teachers, p. 9.

paraprofessionals, interns, or assistant teachers could work with small groups of children where needed ; senior or master teachers could handle more difficult assignments, develop materials, review programmes and train beginning teachers and assistants. Staffing patterns could be adjusted to the needs of various school populations, with schools serving physically, emotionally or socially handicapped children more heavily staffed. Although their proponents do not claim that these plans would save money, they would provide more effective services for the same funds currently expended for undifferentiated teaching staff.

The second advantage claimed for these plans is vertical mobility through a hierarchy of teaching positions. Outstanding teachers are able to advance rapidly ; conversely, teachers whose performance is judged unsatisfactory can be demoted to lower levels in the hierarchy. There is considerable pay differentiation in this system (a master teacher under the Temple City plan could earn \$25,000 in Temple City, at a time when average teachers' salaries in the United States were \$8,300).

With their emphasis on new, highly professional positions, high performance, and opportunities for orderly career progression, differentiated staffing plans would appear to point in the direction of greater professionalism in teaching. The teacher organisations take a cautious view, however, primarily because of the threat to their existing membership implied in some of the provisions, which seem to threaten the concept of automatic tenure ; periodic re-certification, for example, is an implied feature of these plans.

The NEA, which through its TEPs (Teacher Education and Professional Standards) Commission has done a great deal of work in the area of teacher education and utilisation, has in the past endorsed some of the concepts inherent in the new schemes ; the AFT takes basically a more negative view on ideological grounds, seeing in the current plans disguised merit pay schemes and a concept of teaching as a competitive, rather than a co-operative and egalitarian undertaking.

Perhaps the most fundamental issue (raised by both the AFT and NEA) for our purposes is the effect of these innovations on the professional status of teachers. In many of the proposals for accountability and some of the features of differentiated staffing plans, relatively little control in decision-making is vested with the professionals themselves. Many of the judgments and decisions concerning teaching effectiveness, promotions, or

demotions will be made by those outside of the profession - school board members, supervisors, state education representatives. The Massachusetts proposal emphasizes that teachers themselves should have a major role in the review process, but this procedure is not being emphasized in all states where changes in staffing patterns are being considered. The NEA declared in a recent policy statement on this topic :

...it has been traditional to assume that teachers take their direction from others : officials of the institutions in which they are prepared, school district and building administrators, local school board after they begin to practice, state boards of education, legislators, parents, community leaders and other powerful laymen. The cry has been that education is too important to leave to educators - and multitudes of teachers have passively agreed. The teaching profession must have certain responsibilities delegated to it by the public if it is to contribute significantly to the improvement of education and to be accountable for what happens in the schools.(1)

The extent to which this delegation of responsibility will occur cannot be readily predicted at this point. Broader political and social events will play a part ; firm union policies have yet to jell. These in turn will be affected by the extent and type of trade union activity which will characterise the profession in the next few years. Although unionisation per se is not incompatible with professionalism - and is becoming more and more characteristic of many professions in the United States, including teachers at the college level - the stance taken by dominant unions on specific professional matters may affect decisively the degree to which professional status is achieved. To date, the NEA with its strong base at the state level and its tradition of cooperation between administrators, educators, and teachers is still numerically dominant (close to half of all classroom teachers are members), but the more militant AFT has gained great strength in the large cities, especially New York, and enrolls over 11 % of all teachers. With roughly half of all teachers still unaffiliated it remains to be seen in which direction further unionisation moves and policies will evolve, especially as the United States enters a period of relatively low demand for new teachers.

1) National Commission on Teacher Education and Professional Standards, NEA, "Governance for the Teaching Profession", No. 1. Working Paper. Washington, D.C. : National Education Association, November 1970, pp. 2-3.

V

SUMMARY

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Are American teachers on their way to becoming a full-fledged profession or at least a more professionalised group than was true in the past ? The data presented in this paper lead to an ambivalent answer : they are probably not nearly as distant from professional status as is often assumed, but reforms now in progress may not contribute toward further professionalisation.

Turning back to the classical criteria for professional status, it would seem that the area of greatest improvement in the recent past (and of likely further improvement in the future) is professional training. Teachers are increasingly trained in colleges and universities and given richer backgrounds in subject-matter skills. Five years of post-high school education are becoming the norm, rather than four years or less, characteristic of the present generation of teachers. Especially at graduate level, programmes in the field of education are beginning to emphasize internship, clinical practice, and - as instruction becomes more individualised with the use of the new technology - diagnostic and remedial work with students. As these trends become implemented, and teacher education moves away from the more primitive instructional methodology characteristic of earlier teacher education courses, the gap in academic standards between the field of education and academic fields is bound to narrow or disappear. Teaching careers probably attract better students more often now than in the past. Disillusionment with the natural sciences, a growing interest in the helping professions, the impact of related Federal programmes such as the Peace Corps and the Teacher Corps all play a part in this, as does the availability of better graduate programmes such as the MAT's. Furthermore, higher education in the United States is currently in a state of change and re-examination. One of the ways in which the academic mores are changing is the continuity of studies : more students in all

fields are interrupting their studies, and alternate degrees short of the PhD, are being encouraged, at least at intermediate points. This is the pattern which was characteristic of the education field, and was the reason which set it apart from other fields as being academically less respectable. In future years, teachers may get more financial help and encouragement in pursuing part-time graduate study ; this in turn should facilitate upward mobility within the profession which the new staffing patterns are encouraging.

With respect to recruitment and retention, on the other hand, the findings presented here strongly suggest that it is unlikely that men will be more heavily recruited and retained. Furthermore, were such recruitment to occur, it might well be at the expense of quality, since at present women who have a strong commitment to teaching careers are drawn from higher ability strata than men who become career teachers. The extent to which restructuring of teaching roles can offset this trend is unclear. And as long as the teaching profession remains predominantly female, it is unlikely to achieve the full professional autonomy and authority in dealing with parents, school boards, and other interest groups that have a powerful voice in the field of education.

Authority and autonomy are basic to true professionalism. They cannot be subject to curtailment without destroying the professional nature of the occupation. Until now, this attribute has only rarely been present in the work situation of the American teacher ; in the future, its achievement is very uncertain. As graduate education improves, and the uses of educational technology become more widespread, parents and school board members may defer educational decisions to educators to a greater extent than at present ; perhaps teachers, like physicians, lawyers or engineers, will be granted the monopoly of knowledge in their area which they now lack. But there are countertrends. One of them is the current emphasis on community control and demands for greater parental decision-making with respect to curriculum choices and teaching methods, and which originates in often justified dissatisfaction with the educational system's past failures. These demands were most often made by representatives of minority groups, and involved only a fairly small segment of majority communities. More widespread is the so-called taxpayers' revolt, which motivates the search for teacher accountability and related phenomena. This current effort towards performance-oriented evaluations and rewards can be reconciled with professional authority only if it is

done in the context of self-regulation ; as soon as it becomes an outside review (as is true of most current and proposed programmes and procedures), such an effort takes away essential professional authority. However, one might predict that the current attempts to obtain better teacher evaluations and "accountability" will be relatively short-lived because they are unlikely to bring magic results ; to date, the early experiments have apparently disappointed their sponsors. Changes in staffing patterns are probably a more promising innovation and could be set up in ways compatible with preservation or upgrading of professional standards. Here, it will remain to be seen how teachers' organisations can reconcile their conflicting roles of preserving the economic interests of their present membership - including older, inadequately trained members - and seizing opportunities for professional development while skirting the dangers of bureaucratisation inherent in these schemes.

There can be little doubt that as the teacher staffing patterns change, the upper echelons, whether they be called master teachers, educational specialists, or professional teachers - will act and be treated as true professionals. The future of the classroom teacher is more debatable. The easiest and most tempting prediction is for a continuation of a semi-professional or quasi-professional role for the bulk of classroom teachers ; that of an increasingly well-trained technician, who will perform a skilled, technical task, defined, outlined, and supervised by a professional, perhaps a master teacher with a PhD. This trend was predicted some years ago by most knowledgeable observers ; so far, it has not come to pass. Bureaucratic inertia, the opposition of teachers' organisations, some disillusionment with the adequacy of early technological innovations and the recent introduction of paraprofessionals have combined to preserve or even enhance somewhat the status of the regular classroom teacher. Better recognition of the emotional component in the learning and maturation process points to new and important roles for the teacher in direct and continuous contact with students. Physical restructuring of school buildings and classrooms may bring other changes. Many of the most promising educational experiments conducted in England and in the United States along these lines, although relying on ancillary personnel, continue to emphasize the crucial importance of the one teacher who is in daily contact with students. While newly defined, high-level teaching positions are likely to be created, this may not be at the expense of the classroom teachers, who will continue to travel the tortuous road toward professionalism on which they have already come a fairly long way.

XI

TOWARDS A POLICY FOR THE PROFESSIONALISATION OF TEACHERS

by

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SUMMARY OF KEY ISSUES

In OECD countries teachers are not normally described as professionals. Attempts to raise the quality and status of teachers should not take as their target the traditional, professional model, however, as this exhibits insular and exclusive characteristics incongruous in the present context of mass education. An "open" or "responsive" model of professional organisation and relationships may pose a more suitable goal.

The conditions under which teachers currently work are the product of cultural, social and political demands on education. Teachers generally accept these without protest, even though such demands create conflicts within their work and frequently hamper the development of the expertise necessary for their effective management of learning.

Teachers are unlikely to raise the status or quality of their work of their own accord. Available evidence suggests that, in background and attitudes, teachers are very much the conventional products of their own societies. Their organisations and interests reflect and reinforce social inequalities rather than concern for improving the educational opportunities of pupils.

Over the past twenty years educational policy and planning has concentrated more on expansion and on meeting the growing demand for education than raising the quality of education available. The effect of this on teachers has been mixed, but has generally not helped to resolve the ambiguities contained within their roles. Recent plans, more directly concerned with raising the quality of the teaching force, continue to be unsatisfactory in their failure to consider either the nature of the teaching expertise that children need or the information available on teachers' social and political positions and obligations.

The development of professional teaching expertise has logically to be based on the body of knowledge now available about the nature of learning. This suggests, in particular, the need for teachers to be psychologically as well as intellectually mature, and capable of understanding their pupils' total learning environments. Such criteria cannot be approximated until the teacher is

freed from the social and political constraints which confine him to a narrowly conservative appreciation of pupils' origins and potentialities. Policies for the professionalisation of teachers have ultimately to be considered, therefore, in the context of broader, educational reform.

INTRODUCTION

PROFESSIONALS AND PROFESSIONALISATION

Professionals may be defined in the most general of terms as experts engaged in the application of a specific body of knowledge. Traditionally doctors, lawyers and clerics have been ascribed this status but in OECD countries since the mid-nineteenth century other groups have also aspired to such ranking. The extent to which these others, such as engineers, accountants, architects, teachers, nurses and so forth have made the grade has become the subject of an extensive, academic debate, involving a prolonged consideration of how the exact characteristics of a profession are to be typified (1). From this discussion the conventional "ideal-type" of a profession emerges as a highly skilled and carefully trained community of practitioners engaged in some socially prestigious activity. Such a community typically contains a considerable degree of autonomy over the ways in which its specialised knowledge is applied, an autonomously administered code of ethics supported and sanctioned by a formal professional organisation, personalised relationships between practitioners and clients and a material income, based primarily on fees, making possible a distinctive and comfortable style of life. As individuals, therefore, professionals have customarily been characterised as knowledgeable, expert, prestigious, prosperous and autonomous.

Teachers have not normally been found to match all of these requirements and as a result have become characterised as semi- or quasi-professional. Their shortcomings have been listed as an inadequate body of knowledge on which to base their activities,

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- 1) For example : A. Carr-Saunders and Wilson, The Professions, 1933.
T. Parsons, "The Professions and Social Structure" in Essays in Sociological Theory, 1958.
K. Prandy, Professional Employees - A Study of Scientists and Engineers, 1965
A. Etzioni, The Semi-Professions and Their Organization, 1969.

lack of a professional code of conduct and professional attitudes, failure to establish proper professional organisations and insufficient social prestige. (1) In contrast, however, since the Second World War, demands on teachers have rapidly multiplied, considerable knowledge has accumulated outside the normal teacher-training establishments and teaching environments about the learning processes and education itself has become a major political and social concern. It has become commonplace, therefore, in OECD countries to talk about the need to "professionalise" the teaching force.

It was, for example, in this context that, in 1966, a joint ILO-UNESCO meeting on the status of teaching laid down that :

"Teaching should be regarded as a profession : it is a form of public service which requires of teachers expert knowledge and specialised skills, acquired and maintained through rigorous and continuing study : it calls also for a sense of personal and corporate responsibility for the education and welfare of the pupils in their charge" ;

and also that :

"The status of teachers should be commensurate with the needs of education as assessed in the light of educational aims and objectives ; it should be recognised that the proper status of teachers and due public regard for the profession of teaching are of major importance for the full realisation of these aims and objectives." (2)

It is dubious, however, whether the organisation or relationships typical of the traditional profession present wholly desirable targets for present teacher policies. In the first place, members of the established professions expect and are accorded an "exclusive" status, protected by various institutional devices from outsiders :

1. Through self-recruitment, with sons and daughters frequently following in parents' footsteps, professions tend to preserve a social and ideological homogeneity.
2. Through close control over patterns of training,

1) M. Lieberman, Education as a Profession, 1956.

2) Special Intergovernmental Conference on Teachers, UNESCO, Paris, 1966.

established professional customs and initiation rites are preserved, even when clearly out of date and without rationale.

3. Through the development of inner "élites", professions tend to become oligarchic and prevent new entrants contributing to the development of professional skills except within pre-ordained limits that cannot threaten the leaders' status.
4. By developing a distinctive style of life a profession often generates norms of conduct which bear little or no relationship to the needs or well-being of clients.
5. By "mystifying" or "reifying" their skills, in particular by developing a language non-intelligible to outsiders, professionals tend to insulate themselves from public criticism and enhance their own status.
6. By developing professional associations, professionals often acquire sufficient autonomy over their actions to protect themselves against public appeal or protest. They often then tend to use this power to conserve rather than to extend their knowledge and skill.

Such developments confirm the self-interest of a profession and signal the diminishing importance of those whom the profession is supposed to help. They thus are responsible for the destruction or non-creation of meaningful relationships between professionals and other individuals. They also establish rigidities of organisation and attitude that make it difficult for the professional to respond to social demands for expanded or different forms of service. In many countries, because of such developments, the state has been compelled to come to the defence of the public and to reorganise professional services. In some instances, as with the nationalisation of health in the United Kingdom, substantial professional opposition has had to be faced and overcome. (1)

In the second place, the judgements made by the conventional professional are not generally available for popular evaluation but have to be taken "on trust". Relationships with clients are, accordingly, paternal and dictatorial. Though such relationships may well be of a highly responsible kind and of a service, rather than profit-making nature (2) with their morality underwritten by

1) H. Ekstein, Pressure Group Politics, 1960.

2) T.H. Marshall, Citizenship and Social Class, 1950.

professional sanctions, there can be no guarantee that they will be responsive to individual needs. Currently, demands for participatory democracy, for consideration of the individual and for his greater involvement in decisions affecting his own well-being are challenging previously hierarchical relationships. The greater availability of education and the wider dissemination of information through the mass media are creating a more critical and more aware public to whom those in positions of responsibility are being forced to respond. It is arguable, therefore, that there is now a need for a less élitist and less insular conceptualisation of the professional role and for the development of more socially responsive professional relationships.

In teaching this need assumes special proportions. First, the spread of mass education in OECD countries has necessitated the rapid recruitment of very large numbers of teachers, making any attempted emphasis on an "exclusive" or "élite" status for the teaching profession quite unrealistic. The fact that university teachers, hitherto of a fairly assured professional status, are gradually losing prestige as their students and they themselves increase in number, supports this contention. Secondly, the compulsory nature of school education not only invalidates the idealised conception of the traditional professional relationship between expert and voluntary, fee-paying client but also gives the teacher exceptional powers by placing the child in a situation from which he has no acceptable escape. Thirdly, the social and psychological distances built into traditional, professional relationships are not necessarily viable for an educational system interested in establishing greater rapport between teachers, pupils and parents. Recent research suggests that the central and autocratic role of the teacher in the learning situation has been overvalued and overemphasized ; that much is to be gained from the teacher's closer and more effective involvement with his pupils ; that self-directed learning on the part of pupils may be the only realistic form of education in a rapidly changing society. In other words, there is little in current educational research that supports the development of teachers' responsibilities and skills through support for and the extension of their professional egos.

There seems every reason for desiring that, like the traditional professionals, teachers should become increasingly knowledgeable about, and expert and respected in their management of the learning processes. The above goals can be approached in

education, however, only if the traditional "insular" model of a profession and the conventional pattern of relationships between professionals and their clients are revised. A redefined, "open" model of "professionalisation", more congruent with changing social values, with the nature of the teaching force and with the teacher's work, would do better to emphasize the importance of co-operative and individualised relationships between teachers and pupils, reduced social distances between professionals and clients and the value of the teacher's availability to and rapport with those for whom he works. Whether the present state of education can adopt and support such a model is, however, another matter. If teachers were to become more sensitive and more responsive both to individual pupils and to their environments, the nature of education itself would have to change for most educational structures do not encourage the development of such types of relationships. (1) This paper recognises therefore that no successful policies for teacher professionalisation can be worked out in the above terms unless present educational arrangements, including school structures and compulsory schooling, student selection and streaming, classroom organisation, curriculum content, examination systems and so on, are also revised.

The perspective employed throughout this paper is both broad and comparative. As such it runs the risk of speaking in terms of misleading generalities rather than relating to the specific experiences of teachers, pupils and administrators in the widely differing OECD Member countries. There is, nevertheless, a real need to attempt to compare educational experiences and situations in countries with common areas of concern in the development of teacher policies. Through comparative analysis one may be able to let slip an element of reality hitherto unperceived, or provoke a rearrangement of ideas on which more relevant policies may be based. In spite of its obvious shortcomings, therefore, it is hoped that the approach contained in this paper has a defensible rationale.

1) For a recent summary of research demonstrating the socially dependent and impotent character of educational systems in general see A. Little, "Education: A Sociological Portrait", New Society, 23rd December, 1971, No. 482.

Part One

THE SOCIAL BACKGROUND OF TEACHING IN OECD MEMBER COUNTRIES

1. CONFUSION OVER THE TEACHER'S ROLE AND THE DEVELOPMENT OF ROLE CONFLICT

In the early years of mass education - in France, for example, after the promulgation of the Napoleonic Code, in England and Japan after 1870 - most teachers in OECD countries were recruited to do little more than teach basic reading, writing and mathematical skills to the children of the growing urban proletariat and, at the same time, instil a decent sense of sobriety and religiosity into their pupils. (1) Apart from a minority of university graduates recruited to teach in private schools, most teachers were recruited via the monitor system, whereby brighter pupils became teachers on the completion of their relatively short studies. Closely affiliated to the class structure, this system demonstrated very limited educational goals and contained no conceptualisation of pedagogy beyond that of simple indoctrination ; it also expressed a simple faith in the products of the system indicating a very restricted vision of what knowledge or ethics involved.

Formal teacher-training systems were slow to develop, but eventually did so, in a piecemeal and random fashion. Meanwhile, in the wider society, the finite nature of knowledge and thus the obvious wholeness of school curricula started to become more suspect. Training colleges scarcely reflected this in their curricula, however, and in the first half of this century, these colleges remained largely aloof from contemporary developments in science. Teachers therefore continued to indoctrinate pupils in the traditional fashion, even though knowledge, social beliefs and morals were rapidly diversifying.

1) A. Tropp, The School Teachers, 1957.

It was not only with cultural demands, however, that teaching failed to keep pace, for the teachers were not prepared for the rapid extension of their social responsibilities that occurred, at least in part, as "the family" passed on certain of its previous socialising and custodial activities to education. (1) This extension of teaching duties became reflected, therefore, in a growing confusion over what exactly teaching expertise and the teacher's role implied.

Behind this complex situation lay other significant factors, ranging from demographic expansion to the politicisation of education. Throughout this century, but particularly since the Second World War, a vastly increased demand for mass educational facilities had to be met in all OECD countries. The extension of compulsory education, the additional demographic increase in the number of children of school age, the growing social demand for education as a means to social and occupational mobility, the lowering of acceptable pupil/teacher ratios and changing educational techniques all combined to raise the demand for teachers to a level previously unknown. (2) Though emergency measures, often involving the lowering of teaching standards, initially satisfied this demand, in many cases a second range of forces then came into play, provoked partly by changing economic and social needs, partly by the greatly increased fund of knowledge available. Thus further pressures for new and better forms of education - for nursery schools, for special schools, for adult education - and for a greater variety of educational specialists, served and are still serving in certain countries to outpace existing teacher supply and to create for teachers additional responsibilities and tasks.

The increasing complexity of teaching tasks is, however, more than a product of the growth of knowledge and social demand for education. It is fundamentally a consequence of the changing political position of formal education and its vital role in social development. On the one hand, such education plays an important part in the "reproduction" of dominant cultural patterns, thus also reinforcing the social and political status of those whom the culture supports. (3) In addition, to the extent that its

- 1) N.H. Smelser, Social Change and the Industrial Revolution, 1959.
- 2) Training Recruitment and Utilization of Teachers in Primary and Secondary Education, Part One; OECD, Paris, 1971.
- 3) P. Bourdieu and R. Passeron, La reproduction, 1970.

selective mechanisms impede or encourage the mobility of individuals from one social group to another, education reproduces the political and social hierarchy. (1) On the other hand, with growing public awareness of these conservative, non-educational functions, education presents to all participants in the "counter culture" a realistic and vulnerable target. The teacher is caught in between two major forces, the one at its extreme insisting on support for the status quo, the other on a radical liberalisation of educational institutions.

It is widely recognised that teachers have overwhelmingly accepted their conservative and reproductive role as dominant. Thus recent research has highlighted the teacher's diffuse, conformist and moralising qualities. The diffuseness of the teacher's work has been indicated by the many functions that the teacher is generally prepared to fulfil. (2) Haviighurst shows, for example, that the teacher regularly encompasses the roles of "participant in community affairs, social reformer, public servant, surrogate of middle-class morality, mediator of learning, disciplinarian, parent substitute, judge and confidant". (3) All these activities, moreover, are accomplished within a broadly conformist perspective, an aspect on which Parsons focuses when pointing in his now classic article to the numerous ways in which teachers contribute to the internalisation in their pupils of particular social norms and values. (4) In turn this helps to explain the highly moral conduct that the public has grown to expect of teachers (5), even in their private lives, and the social isolation of teachers brought about by their consequent occupation of a public pedestal.

A developing pattern of teacher militancy (Table 1) seems to suggest in some countries, first, that teachers are becoming frustrated by the restrictions that such a conservative role implies and secondly, that teachers are moving away from this role towards a more challenging social position. Whilst the former may well be true, the latter is far more questionable. Though teachers' unions have recently become more aggressive (6) and campaigned

- 1) e.g. Ability and Educational Opportunity, OECD, Paris, 1961.
- 2) B. Wilson, The Teacher's Role - A Sociological Analysis, BJS, 1962.
- 3) Quotation from W. Taylor after Haviighurst, Half a Million Teachers, Lyndale House Papers, 1968.
- 4) T. Parsons, The School Class as a Social System, HER, 1959.
- 5) L.A. Manwiller, "Expectations Regarding Teachers", Journal of Experimental Education, 1958.
- 6) Vincent Burke, Teachers in Turmoil, Penguin, 1971.

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Table 1

The table presented below illustrates the sharp increase in teacher militancy as reflected in strikes or work stoppages. Estimates of National Education Association and of the leaders of the American Federation of Teachers for the school year 1968-69 indicated that as many as three to four hundred school strikes might take place (1).

SUMMARY OF TEACHER STRIKES AND WORK STOPPAGES BY SCHOOL YEAR AND TYPE OF ORGANISATION (2)

School year, type of organisation	Number of strikes and work stoppages		Estimated number of personnel involved		Estimated number of man-days involved	
	Number	Per cent of total	Number	Per cent of total	Number	Per cent of total
1	2	3	4	5	6	7
School Year						
1960-61	3	1.59	5,080	1.93	5,080	0.32
1961-62	1	0.53	22,000	8.36	22,000	1.38
1962-63	2	1.06	2,200	0.84	3,000	0.19
1963-64	5	2.65	11,900	4.53	29,020	1.51
1964-65	12	6.35	15,083	5.73	27,453	1.72
1965-66	18	9.52	33,620	12.77	49,220	3.09
1966-67	34	17.99	10,633	4.04	29,079	1.82
1967-68	114	60.32	162,604	61.78	1,433,786	89.97
Type of Organisation						
Teacher union	76	40.21	111,456	42.35	942,234	59.13
Professional association	103	54.50	149,147	56.67	643,697	40.39
Joint union/association	5	2.64	2,186	0.83	5,426	0.34
Independent organisation	1	0.53	130	0.05	1,430	0.09
No organisation	4	2.12	281	0.10	851	0.05

1) Jack Star, "Our Angry Teachers", Look, 3rd September, 1968.

2) This table is adapted from one presented in "Teacher Strikes and Work Stoppages, January 1930 to July 1968", NEA Research Memo 1968-15, p. 4.

Source : Reviews of National Policies for Education - United States, "Educational Research and Development in the United States", OECD, Paris, 1971.

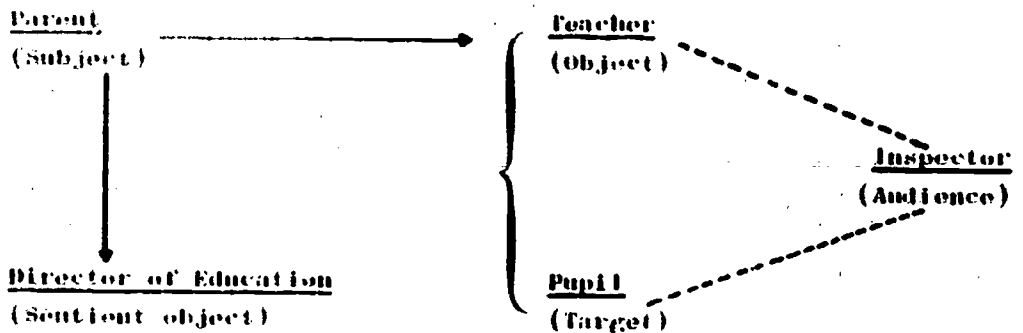
for improved conditions of work and better salaries, and major teachers' strikes such as occurred in Sweden in 1967 or New York in 1968 have helped to shatter the traditional teacher image, such actions have not really been intended to challenge the conventional position of education in the social system. Thus, while responding in some measure to deteriorating conditions, teachers have fallen between two stools. They have neither reaffirmed their support for their conservative role - indeed they have to some extent alienated their conservative allies - nor have they concerned themselves with a possible new role by considering changing the social and political direction of education.

Within this situation it is possible to recognise the significance of detailed studies of role conflicts experienced by teachers in their daily activities. Here, however, a word of general definition is in order. A role is a typification or stereotype of an activity in which a particular pattern of behaviour, conforming to certain standards, is expected. Through recognising "roles" individuals come to recognise and objectify a surrounding social world; through playing roles they actively participate in that world. Roles do not, however, exist independently of actors and audiences; they exist only by virtue of those who act them out and by those who support or sanction the performance. (1) When, therefore, either the behaviour of actors or the expectations of others change, consequent complications may also be anticipated in interpreting such roles and in their associated status.

The complex nature of teaching roles has only recently become a subject for serious research. B.J. Biddle has attempted to articulate this in a symbolic interactionist model which suggests the different role-relationships and role sets of the teacher and thus indicates the methods by which the role is sustained (2). Biddle's model can be depicted thus, evoking a situation in which a parent gives his views on a teacher, but the categories of subject, object and so forth can clearly be alternated, firstly, to obtain different perspectives on what being a teacher involves and, secondly, to build up a multidimensional construct of the "teacher's role".

- 1) For a fuller statement of this dialectic see P.L. Berger and T. Luckman, The Social Construction of Reality, particularly pp. 89-96.
- 2) Biddle, Rosencranz and Rankin, Studies in the Role of the Public School Teacher, 1961.

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Bearing this model in mind, the idea of "role-conflict" can be fairly simply defined as something which takes place when an actor experiences conflicting demands on the way he should or should not behave. Where a role like that of the teacher is diffuse it is, by definition, a centre of conflict as its boundaries and standards are unclear. In a survey of the United States, Britain, New Zealand and Australia (1), this ascription was substantiated by the identification of ten common sources of "interpositional conflict" generated by the different standards of behaviour that teachers felt were being asked of them. In the course of this study the ways in which teachers perceived the demands of four groups of significant others - school officials, principals or headmasters, other teachers and parents - were analysed. In all countries, conflicts were found to exist, although of different intensities, between teachers and these four groups on the following issues :

Whether or not teachers should :

- a) attend parent/teacher meetings regularly ;
- b) accept non-professional duties willingly ;
- c) consistently maintain order and quiet in the classroom ;
- d) emphasize a broad range of goals in classroom instruction ;
- e) use corporal punishment to control difficult pupils ;
- f) confine activity during free periods to professional matters only ;
- g) adhere strictly to administratively-provided curricular plans ;
- h) avoid speaking out on controversial topics at political rallies or other public meetings ;

1) Summarised by B.J. Biddle in "Role Conflicts Perceived by Teachers in Four English Speaking Countries, Comparative Education Review, 1970.

- i) have an occasional drink at a local hotel or bar ;
- j) put emphasis on social advancement in instructing pupils, i.e. encourage pupils to get ahead in life.

In the four countries in this study, role conflicts appeared strongest between teachers and parents and then, in descending order, between teachers and school officials, principals and other teachers. The effects of such conflicts appeared to be substantial when compared with conflicts generated by nationality, age, sex, background of teacher or size of school. Though one cannot be sure either of how much role-conflict an individual can tolerate, or of the extent to which role-conflicts can prove creative as well as destructive, the above study emphasized "not only a relationship between role-conflict and loss of morale, but also that role-conflict appears to be the major generator of low morale among all dependent variables in the study".

It is important, however, to notice the bias of this study. It does not deal with a fifth, and, one might submit, the most "significant" group of others, i.e. the pupils. Yet, it is clear that the most serious conflicts generating low morale among teachers develop where a great distance separates the social and political norms and values supported by the educational establishment from those recognised by certain of its pupils - namely those suffering from poverty and other forms of deprivation. It is in such situations that the teacher is most dramatically confronted by a need to choose between enforcing the status quo, and thus supporting the educational establishment, or becoming a proponent of social and educational reform. Pedagogic conflicts of the type outlined in Biddle's study ultimately belong within this wider context. It is perhaps, therefore, on a redrafting of education's social and political role, rather than on a resolution of the teacher's niggling, small scale role-conflicts, that the professionalisation of teachers will depend.

II. SOCIAL AND POLITICAL BARRIERS TO THE PROFESSIONALISATION OF TEACHING

An examination of the teachers' social and political status and the ways in which this is expressed in education reveals a structure of relationships incompatible with the development of professionalisation. The relatively low social origins of teachers and the social composition of the teaching force have become institutionalised in prevailing educational systems. At the same time,

class and sex differences between teachers have come to support conventional social and educational inequalities.

Teachers not only participate in certain types of relationships within the school, as individuals they also occupy other social "statuses" which in turn affect their teaching roles. Studies carried out in various countries show, for example, a relatively low social grading of teachers that may partly be a function of their mainly lower middle-class origins. This contrasts with professions such as medicine or law, where the majority of members come from middle-class backgrounds. (1) The class origins of teachers differ, however, depending on the type of school being examined ; in grammar schools or lycées, traditionally élite forms of education, teachers are much more likely to be drawn from a middle-class background, whereas in the generally less prestigious primary schools more teachers of lower class origin are found (cf. Table 2).

Table 2
THE SOCIAL ORIGINS OF SERVING TEACHERS IN FRANCE (1964)

	Serving secondary teachers (1964)	Serving primary teachers (1964)
Farmers and farm workers	3	13
Operatives	10	27
Office staff	17	19
Medium-level executives (including primary teachers and businessmen)	28	31
Higher executives (including university and secondary teachers and professional classes)	42	10

Source : "La représentation de la condition du maître dans la société" (the social image of teachers), Enfance, Nos. 2, 3, April, September 1966.
(Quoted in Training Recruitment and Utilization of Teachers in Primary and Secondary Education, op.cit.

1) e.g. W.L. Warner et al, Social Class in America, 1949 ; D.V. Glass ed., Social Mobility in Britain, 1954.

The uncertain status of teaching is also partially, like nursing, both cause and effect of feminisation, even though women recruits to teaching have a higher class ranking and are generally better qualified than men. (1) In most countries women form about two-thirds of the total teaching force and predominate particularly in primary education (Table 3). (2) During recent rapid expansion, the percentage of women recruits to teaching was further increased, rising to an all-time high of 75 per cent in the United States. (3) Convenient hours and holidays, the chance to work with children and lack of alternative employment opportunities have outweighed low-level salaries in encouraging women to enter teaching in such numbers. Many men teachers feel such motivation to be incompatible with a professional outlook, however, and the fact that it is predominantly a female occupation has arguably diminished the attraction of teaching to men. It has also probably discouraged administrators from improving salaries, career prospects or conditions of work. The relatively low social standing of teachers has thus been reinforced more by social attitudes to women workers, than by feminisation itself.

A third factor of note in the social structure of the teaching force is that of age. Except between the wars the teaching force in OECD countries has been constantly growing and at any point in time, therefore, a high percentage of teachers have been young and recently trained. It is arguable that such relative youthfulness partly accounts for teachers' growing militancy and thus for any recent downgrading of their social status.

Not only is the general social ranking of teachers related to their class, sex and age. It is also on these variables that certain conflicts within the teaching force itself seem to turn. Primary school teachers are more likely to be young, female and of a lower class origin than are secondary school teachers; the latter, in general or technical secondary schools, are also more likely to be young, female and of a lower class origin than grammar school teachers. It is not coincidental that between these three

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- 1) L. Sharp, Teachers As Professionals : Current Career Profiles and Trends.
 - 2) Of OECD countries, Turkey alone has a lower percentage of women in primary as opposed to secondary education, a situation probably due to the social and educational conditions in the many rural schools.
 - 3) Training Recruitment and Utilization of Teachers in Primary and Secondary Education. Tables 17-19, OECD, Paris, 1971.

Table 3

CLASS AND SEX DIFFERENCES BETWEEN TEACHERS IN DIFFERENT TYPES OF SCHOOLS
IN ENGLAND AND WALES IN 1955

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Father's occupation when teacher left school	Type of school			
	Primary %	Modern %	Maintained grammar %	Dis-Grant grammar %
a) MEN				
Professional and administrative	6.0	7.5	12.5	19.8
Intermediate	48.3	45.9	55.1	61.9
Manual, skilled	32.5	36.5	25.3	14.6
Manual, semi- and unskilled	13.2	10.1	7.1	4.0
All	100.0	100.0	100.0	100.0
(N)	1,251	1,178	1,209	544
b) WOMEN				
Professional and administrative	8.8	11.4	17.8	30.4
Intermediate	52.2	54.8	63.1	57.4
Manual, skilled	29.6	28.1	16.4	10.4
Manual, semi- and unskilled	9.3	5.7	2.7	1.8
All	100.0	100.0	100.0	100.0
(N)	1,449	1,083	1,100	733

Source : J. Floud and M. Scott, "Recruitment to Teaching in England and Wales" as adapted by Banks,
The Sociology of Education, 1968.

types of teachers there is little communication and even active hostility - particularly when they are put to work side by side in a comprehensive establishment. (1) Social variables would seem in these cases to reduce the possibilities for the formation and establishment of professional relationships. (2)

The social conflicts involved in contemporary society for the working woman and the educated, lower middle-class male also seem to be repeated in teaching, reflecting and reinforcing a higher rate of teacher drop-out and lower rate of professional commitment than might generally be expected. In a survey of the United Kingdom in 1963, for example, R.K. Kelsall found that only 44 out of any 100 qualified teachers could be expected to be at work ten years after their date of entry into teaching. Such findings have been repeated for many other countries. With women this drop-out rate is clearly associated with leaving to bring up a family and it is still uncertain how many return to teaching, possibly with greater commitment, once their family duties are over. The latter statistic tends to get ignored, however, in emphasising the very real wastage of female teaching abilities and the lack of incentive for younger women to develop professional skills.

In the case of women, it is generally the pull of extrinsic factors and the conflict between teaching and family duties that motivate leaving teaching. In many countries, however, men also leave teaching at a rate higher than one might expect. In their case it seems to be factors intrinsic to teaching that combine to reduce commitment and, as Biddle emphasized, to lower morale, though these intrinsic factors are clearly exaggerated by outside pressures. On entry, men seem more likely to adhere to a conception of teaching as a "half-way house" from which they may be able to move on to a more remunerative and expansive occupation. (3) This attitude of mind is closely related to that of the many students who continue to resort to a place in a college of education when other channels of higher education appear closed. As a lower

- 1) V. Isambert-Jamati "Un nouveau type d'établissement du second degré en France. Obstacles à la coopération entre les professeurs", in Matthyssens and Vervoort, Education in Europe, Sociological Research, Conseil international des sciences sociales, 1969.
- 2) V. Burke, Teachers in Turmoil examines generational conflicts between young and older teachers in the U.K.
- 3) Mason, Dressel and Bain, "Sex Role and the Career Orientations of Beginning Teachers" in Charters and Gage ed., Readings in the Social Psychology of Education, 1963.

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middle-class, but educated, individual the average male teacher may well find the pressures to social mobility, both latent in himself and imposed additionally by social and family demands, difficult to respond to within the present confines of teaching. The lack of clearly defined career structures and the low salary levels allow for little release of energy for the socially aspiring teacher and even if his commitment to teaching is quite strong he may still feel compelled to leave an occupation in which his fundamental social needs are in conflict with his conditions of work.

A further phenomenon caught up in this situation, as indicated above, is the limited pattern of teacher mobility. Teachers tend to "drift" from less prestigious to more prestigious types of work, e.g. from primary to secondary school teaching, from secondary school to training college, on the basis of a socio-economic rather than educational rationale. The lack of institutionalised career structures or of rewards for the development of particular types of expertise encourages rather than discourages such movement. It is striking, moreover, that where career structures can be detected, they are based on the principle of "less teaching, more prestige". Thus social distinctions between teachers are often reinforced at the expense of the development of pedagogic skills.

Since there are few recognisable career structures within particular types of teaching, there are no well-trodden paths either whereby teachers may move, if they so choose, into other related occupations such as educational administration or planning, educational psychology, the creation of new forms of educational software or hardware, full-time careers counselling and educational research. There is thus no serious attempt to extend teaching experience into other related fields. The problem is compounded for women who, experiencing more depressed career patterns and prospects than men, are relegated to a lower social caste in most school systems. Thus the low social regard in which teachers are held is reinforced by the impact of social pressures within the teaching force itself.

What is surprising is that teachers have permitted this to continue and have themselves made few serious moves to overcome such educationally irrelevant distinctions. In many countries teachers have even institutionalised social inequalities into their own union structures by creating separate unions for men and women and also for teachers in different types of schools. Partially as a result of this, teachers' unions have often failed to develop a coherent and objective viewpoint on education. They

have fought with each other and tended to protect their current status rather than professionalise. This has weakened their potential and limited their strength in supporting policies for greater professionalisation. It is arguable that, as long as teaching personnel remain dependent for their organisation on social inequalities rather than on educational variables, they will fail to become a professional force.

The low social status of teachers is inevitably expressed in political terms. This lack of status, which is translated within education into a lack of educational authority and autonomy beyond the immediate confines of the classroom, is also expressed as political impotence. Above all, the political and social importance of education, as stressed earlier, works against the teachers' attaining professional autonomy. Whatever the system under examination, one finds that control of the organisation of education is widely exercised by non-teaching administrators over both the content of education and the conduct of teachers both inside and outside their schools and colleges. Methods of control are various. In some OECD countries, such as France and Japan, national control of education is overt and direct and encompasses a great range of variables, from school structures to the composition of textbooks. In other countries, such as the United States, Canada or Germany, where politics is organised on a federal basis, schools and teachers have nominally greater autonomy but in fact are severely limited in their activities by local and parental pressures. Yet again, as in the United Kingdom, where education is officially organised on a local basis and where teachers enjoy considerable classroom autonomy (1), most of the important educational decisions are taken purely by administrators on the basis of finance forthcoming from the Government. In very few instances do teachers even participate in educational decision-making and planning, let alone play a decisive role.

To the extent that teachers accept such control without protest, they deny themselves the chance of professional autonomy. Real autonomy would, however, leave the teachers free to select whatever social, political and cultural directions they saw fit to appropriate for the learning process and many authorities are afraid of the possible results. Teacher autonomy has thus become a particularly explosive issue in countries such as Japan where teachers are openly and defiantly allied with particular political

1) S. Hilsum and B.S. Cane, The Teacher's Day, NFER, 1971.

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parties. It is feared, in particular, that in such situations teachers will subvert their pupils and indoctrinate them in narrowly ideological concepts. Nevertheless the final answer cannot be to restrict and suppress the teachers but to remove the political and social inequalities from which their protests spring and by which the exercise of their profession is handicapped. Equally important would be to encourage the silent and less militant majority of teachers to participate more actively in the development of their profession. (1) As, however, the evidence in this discussion emphasizes, the organisation and structure of the teaching force reinforces rather than challenges accepted social inequalities and educational patterns. In such a situation the likelihood of the teachers reforming their profession themselves must be considered remote.

1) Reviews of National Policies for Education : Japan, OECD, Paris, 1971.

Part Two

POLICIES FOR PROFESSIONAL TEACHERS?

I. THE EFFECTS OF RECENT EDUCATIONAL EXPANSION ON THE TEACHERS

Not reform but expansion has, however, been the chief and most effective policy for education in OECD countries during the past twenty years. (1) Particularly, in response to a more diversified student body, new demands have been made for education to fulfil different functions and to provide new types of schooling. Thus educational expansion has occurred both in numbers and in kind. This has created major strains on the resources available to education, of which teaching resources have been the most critical.

In response to the period of acute teacher shortage, certain practices were developed : teacher recruitment was broadened ; teachers were more intensively utilised ; teachers' standards were allowed to become more flexible and, in a formal sense, often lowered. In spite of the deterioration in working conditions at certain times and for major groups of teachers, by the end of this period there was a general improvement in teachers' working conditions and salary levels. These improvements were however essentially insufficient to respond to the need for teachers' professional development.

The teacher shortage that occurred in all OECD countries between 1950 and 1965 resulted, for example, in a considerable diversification of recruitment procedures (2). In 1950 qualified teachers were, in general, recruited from two sources : from training

- 1) Conference on Policies for Educational Growth, Educational Expansion in OECD Countries since 1950, Vol. II, OECD, Paris, 1971.
- 2) Most of the supporting evidence for this section is to be found in Training Recruitment and Utilization of Teachers in Primary and Secondary Education, OECD, Paris, 1971.

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colleges, in which certificates were granted at the end of a two-year course enabling students to teach at all levels except that of the grammar school or lycée ; and from one-year education courses taken by university graduates. As a result of the increased demand for teachers both these sources were rapidly expanded and a conscious attempt was made to attract more students, particularly women, to the courses. Films and other information on teaching as a career were made available in schools ; in Germany, the United Kingdom, Sweden and Canada, for example, briefing sessions were organised both inside and outside schools and universities ; even public information campaigns were launched in the United Kingdom, Austria and the United States. Grants and family allowances for trainee teachers were also improved in order to attract more recruits to the field.

The immediate effect of such policies was to broaden the recruitment basis of candidates for teacher training colleges. In many cases this was achieved by allowing candidates holding the secondary school leaving certificate to take a training course in education shorter than that taken by pupils entering straight from school. Apart from this "emergency licensing programme", however, more candidates were also accepted for the standard courses and the intake of training colleges rose.

Since, in spite of these measures, there persisted an insufficiency of qualified teachers for the posts available, other recruitment techniques were brought into play which dependent mainly on the recruitment of part-timers or auxiliaries and other unqualified staff. Thus in many countries the proportion of unqualified to qualified teaching staff rose, particularly in secondary as opposed to primary education and, above all, in technical secondary education. In addition, retired staff were employed, particularly in private schools, the amount of overtime worked by teachers was increased and the pupil/teacher ratio was allowed to rise. Thus the teacher base was both substantially broadened and more intensively worked and qualifications and expertise became relatively less important.

In many ways such policies devalued both the status of the teacher and the quality of his work. The nadir of despair to which certain groups of teachers and schools were plunged was not to be exaggerated - witness the dismal record of "Half Our Future". (1) A further result of this situation was exactly the reverse of the policies' objective, for such policies made the

1) The Newsom Report, Half Our Future, HMSO, U.K., 1963.

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teaching situation so unattractive in many cases that the departure rate from teaching began to increase. This was particularly true in primary education for which the annual male departure rate in the United States, for example, rose to 17.3 per cent, even higher than that of women (16.8 per cent).

There is little evidence to suggest that during this period of expansion, from 1950-65, teacher training colleges did much to diversify their courses in keeping with the greater variety of recruits to teaching or the greater variety of pupils to be taught. Though in the United Kingdom, for example, teacher colleges were linked to the universities through university based Institutes of Education, there was little likelihood of trainee teachers thus experiencing the provocative climate or range of activities available to most university students. Moreover, the average per capita expenditure on trainee teachers remained considerably lower than that on university students. Protests from training college students therefore became more forceful, with the joint complaint that their courses were neither preparing them academically for the subjects they wanted to teach nor giving them the pedagogic and social skills necessary to cope with the changing nature of pupils and schools. (1) Such complaints became more acute as the problems created by educational expansion became manifest.

These developments were aggravated by a general failure in educational planning. Teacher manpower planning seldom reached the point of specifying future, or even immediate, needs for specific types of teachers, needs which could then have been converted into programmes in the training colleges or in-service training. An excess of teachers was produced for certain types of work while serious shortages persisted in other fields, notably mathematics, science and special education. Some of these problems were related not so much to training inadequacies, however, as to teacher mobility. Thus teachers who might have been prepared to change their field of activity were hampered by the lack of suitable further courses. The initial training course remained the prime, inflexible method by which teachers' future spheres of activity were pre-defined. Furthermore, little was done to raise the status of less desirable forms of teaching such as primary or technical education, or to retain teachers within such teaching by offering them more realistic career structures. Studies of

1) E. Britton, The Teaching Profession and the Education of Teachers, Colston Papers, No. 20, 1969.

population movements concerned themselves with pupils and schools but seldom with the related problems of the teaching profession.

In terms of salaries, two general factors made for a mixed response to the increasing need for teachers' services. Firstly, the majority of teachers are employed by public authorities and the structure of salaries in the public service is notably unwieldy and not directly responsive to market forces. Secondly, the teachers' salaries form overwhelmingly the major portion of the total budget for education, which means that a general rise in teachers' salaries can occur only very gradually. Thus although in some countries salary incentives or differentials were developed to attract new teaching personnel, in many other countries the teachers' low status was confirmed by a persistence in relatively low salary levels. In a recent survey of Japan (1), for example, it was found that in upper-secondary and higher education the already low salary levels were declining relative to other salary levels and comparing increasingly poorly with salaries offered to similarly educated personnel in private enterprise. Relative salaries were particularly low for teachers in their thirties.

In most OECD countries over the past few years teachers have campaigned for increased salaries and for an improvement in working conditions. However, the above two factors have been further compounded by bureaucratic rigidity favouring uniform salary scales based upon formal computations and years of service. Even where pressure has resulted in greater personal security for teachers, a poor pattern of rewards for superior teacher initiative and effort has been maintained. Criticism of this situation has taken several directions. Some have advocated various competitive arrangements among teachers, but these have been resisted on the grounds of their detrimental effect on professional relationships and on the co-operation required among teachers for the operation of democratic schools. Others have suggested that teaching be compared to industry ; in this case teaching is said to require greater capital investment (an increase in capital intensity) in order to raise teacher "productivity". However, aside from the questionable assumptions that productivity in education is what proponents of such schemes would define it to be, the sum of these criticisms in financial terms would be to raise to even greater

1) Educational Policy and Planning : Japan, OECD, 1973. "Background Report" prepared by the Ministry of Planning and Research, Japan, for the Japanese Educational Policy Review.

heights the difficult problem of finding financial resources for education. Today therefore salary policies continue to confirm the uncertain and unsatisfactory position in which the teaching force in most OECD countries currently rests and teachers' pay remains lower than that of confirmed, professional practitioners.

The whole chain of educational policies pursued in this period of expansion does in fact suggest that in OECD countries since the war teachers have not been generally recognised or treated as expert or respected professionals. Unfortunately, even more recently developed policies, bearing more directly upon the professionalisation of teaching, show few significant signs of altering the framework within which this profession now rests nor the substantive content of its work.

11. FURTHER POLICIES FOR THE RECRUITMENT AND TRAINING OF TEACHERS : A BRIEF CRITIQUE

With the slowing down of the pace of expansion, OECD countries have begun to consider policies for raising the quality as opposed to the quantity of teachers. These may be very briefly discussed in terms of :

- Teacher recruitment
- Initial teacher training
- Recurrent education for teachers
- Involving teachers in educational research and development.

A. Teacher Recruitment

By 1963, countries' recruitment difficulties showed signs of easing and some countries (e.g. Italy in primary education) began to talk of a teacher "surplus". The concept of "surplus" told one little, however, about the quality of staff available and it was doubtful if in any branch of education there was as yet a surplus of teachers acknowledged as excellent in their chosen field. Thus with the easing of the situation in purely quantitative terms, attention was directed at problems of recruiting for quality.

Revising selection procedures for trainee teachers seemed the obvious starting point for such an effort, with greater concentration on the recruitment of individuals both highly able and sincerely motivated to teach. Difficulties arose immediately, however, from the fact that measuring ability and analysing motivation

involved complex testing devices at best unreliable and contradictory in their findings. (1)

Recent research into the motivations of teachers in the United States illustrates this problem. For women, the choice of teaching has been said to be contingent as teaching provides work compatible with home-making. For men, teaching has been seen to provide a reasonable second choice when a university education and degree-based career have been unavailable. Detailed surveys (2) however, have succeeded in breaking teachers' motivations down into several more subtle variables of importance in career choice, including :

1. Congenial colleagues and working conditions
2. Good salaries, security and promotion prospects
3. Opportunities for intellectual development
4. Scope for initiative
5. Novelty and variety
6. Socially useful work dealing with people
7. Opportunity for high-level administration and planning
8. Work involving communication with people, but not social work
9. Opportunity to rise through one's own efforts ; scope for the ambitious
10. Stability of the teaching job
11. Opportunity to work with children

Amongst these, factors (1) and (6) have been found in the United States to be more important for women and factor (7) for men, though one might anticipate different emphases in other OECD countries.

The difficulties involved in utilising such findings in teacher recruitment are now fairly obvious. Firstly, given that all the above variables mesh together, the analysis of the motivation of any one would-be teacher is a complex and time-consuming affair. Secondly, research has not shown that "desirable" motivations result in efficient teaching - one suspects that the reverse might easily prove to be the case. Thirdly, motivation is not a

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- 1) J.W. Getzels and P.W. Jackson "The Teacher's Personality and Characteristics" in Gage ed., Handbook of Research on Teaching, 1963.
 - 2) e.g. Mason, Dressel, Bain in Charters and Gage ed., Readings in Social Psychology of Education, 1963.

constant and may change with changing conditions of training and work. Similar problems exist in employing measurements of ability, adaptability and other attitudes for selection purposes. The sorry conclusion to so much research, therefore, has been that one can employ only negative selection procedures (i.e. eliminate the most obviously unsuitable candidates) and prolong the trainee teachers' probationary period. This longer period of selection, encompassing actual experience of the teaching situation, is thought to allow a more thorough assessment of suitability both by teachers and by student teachers themselves and to contribute to raising the quality of entrants into teaching in a more meaningful way. Objections to such a policy, on the grounds of student wastage and consequent waste of public funds, have been countered by the promise of greater flexibility in higher education allowing unsuitable trainee teachers to transfer to other courses.

The trouble with these proposals is that they miss the main issues at stake. Firstly, it is hard to see how one can recruit teachers or even consider "desirable" motivations without a clear, prior idea of the functions for which teachers are to be recruited. In most studies and recruitment practices this is not articulated. Secondly, one cannot evaluate even initial suitability to teach without consulting the pupils and the other teachers with whom trainees are put to work. Yet, pupils are not encouraged, either officially or in practice, to discriminate between teachers and evaluate different types of teaching. Indeed, pupils have normally no choice between teachers and no chance to develop such discernment. Furthermore, practising teachers spend little time with trainees and are unable to evaluate them efficiently since the idea of apprenticeship to the teaching profession has not been developed. Thirdly, attracting able and mature individuals into teaching and keeping them there probably depends in the long run less on successful selection procedures than on conditions of training and work internal to teaching and on other external opportunities for employment and education. In other words, recruitment is a function performed not only by educational administrators and college principals but also by the teaching system itself. Fourthly, the wisdom of allowing increasing flexibility in higher education to become a primary objective in the reform of teacher recruitment has to be doubted.

B. Initial Training

The majority of students continue to receive their initial training experiences in colleges of education isolated from contact with the non-educational world. Coming straight from school to college, students receive the major part of their education from ex-teachers and are then fed back into the schools to replenish the system. (1) The conservative insularity of such a process is not to be underrated. It does much to account for the remoteness of teacher training from present-day realities and for the creation of teachers unaware of significant educational, political, social and economic issues affecting their own and their students' environment.

Attempts to breach the walls of this homeostatic mechanism fall roughly into two categories. On the one hand there are those who are concerned to create a greater variety of courses within the colleges of education, perhaps by educating teachers alongside social workers or other similar "practitioners". On the other hand there exists a body of opinion supporting the integration of colleges into more demanding and considerably more diversified university or polytechnic establishments. Both of these are practical propositions in terms of facilities and personnel and both could lead to a broadening of available courses of study. Again, however, there is a danger that they will be implemented in order to solve crises in social work training or in higher education, rather than to improve teacher training itself. They are, moreover, piecemeal attacks on a situation on which a more radical onslaught may well be justified. The former proposal tends, for example, to emphasize the affinity of students taking "practical" courses, the latter the attractiveness and importance of "academic" studies, thus lending weight to the unrealistic and damaging distinctions persisting in teacher education between "theoretical" knowledge and "practical" experience.

In education this distinction has a long and varied history. It is embodied in divisions between courses in "educational theory" and "educational practice" common in most students' curricula ; it operates within selection procedures for the teachers of teachers, turning ex-teachers into more popular candidates than experts from other related fields ; it encourages an insularity

1) The break between school and college is almost non-existent in countries where teacher training colleges complete the upper cycle of secondary education, e.g. France, Belgium, certain Swiss cantons, etc.

in teaching methods that prevents their critical evaluation. Ultimately, and most seriously, it divides the world of "thinkers" from that of practitioners - separates thought from action in a manner directly antagonistic to innovation. (1)

Since creating a new basis for teacher education is at least partially dependent on breaking through this conservative ideology, the proposals previously mentioned do not go far enough. At the moment most teachers in initial training are presented with elaborate, centrally directed syllabi on entering college and have their movements and studies directed to a degree that few university students would tolerate. Their in-service training then takes place within a pre-determined frame and the young teachers are granted little opportunity for independent intellectual activity or freedom for self-development. In some European countries such restrictive practices commonly extend beyond college activities in an attempt to regulate also the students' private social life. Yet, only if new policies for initial training concentrate primarily on liberating the trainee teacher, so that he may direct his own self-development, can one hope to develop an attitude compatible with professional teacher autonomy. Then, and only then, can one begin to expect teachers to relate theory and practice imaginatively in an intellectually independent fashion. Furthermore, such proposals do nothing to break the physical separation existing between in-service training in schools and "academic" study in college or university. The significance of linking these more closely by shifting the onus of teacher training onto practising teachers, with the college as the advisory or consultative body, rather than the custodial body, does not appear to have been seriously considered by very many authorities.

Several specific developments have also been suggested to support curriculum improvement in teacher education. In the provision of more varied course units for study, for example, emphasis, it has been suggested, could be placed not only on improved academic courses, which goes without saying, but also on social and technological subjects. In the United Kingdom students are required to engage for a short while in some type of social work in order to extend their own social experience. This represents a deeply felt need for teachers to be able to communicate with their pupils more sensitively and thus to guide their efforts in

1) See A. Yates ed., Current Problems of Teacher Education, UNESCO, Paris, 1970.

a more meaningful way. Such a policy seems of certain value in contributing to a student's maturity. More significantly, however, this practice could be intended to result in the development of teachers specialised in working with particular cultural or social groups and could challenge the long-held assumption that teachers are "interchangeable from school to school, from grade to grade and from one cultural group to another". (1) Viewed in this way it could then provide a serious contribution to the development of professional teaching specialisations.

In terms of technology the teachers are said to be among those least capable of using modern materials. While certain technologies have achieved a limited popularity - films, slides, records, tape recordings, etc. - others, such as language laboratories, closed-circuit television and programmed learning, have not caught on. Complexity, cost or unsuitability may all provide reasons for the non-use of technological aids, but the general lack of courses in educational technology in training curricula has also to be taken into account. It is now hoped that the provision of such courses in initial training programmes could do much to dispel basic fears of using technological devices as well as encouraging greater teacher control over technological innovations in the future. (2) Such thinking is often accompanied by the belief that technology can provide the panacea to all teaching problems. Many types of technological devices are mere gadgetry (3), however, and serve no good educational purpose.

It seems pointless in fact to introduce teachers to educational technology without ensuring, first of all, that they have a sure grasp of the nature of children's affective and cognitive development and hence of the key learning areas within which such technology might be applied. Yet this is precisely the area where many training colleges still fail to provide professional guidance since they themselves have failed to evolve a satisfactory conceptualisation of learning or to keep up to date with the social and economic environments within which learning has now to take place.

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- 1) L.J. Stiles, "State of the Art of Teacher Education", Journal of Educational Research No. 9, May-June 1971.
 - 2) Educational Technology : The Design and Implementation of Learning Systems, OECD/CERI, Paris, 1971.
 - 3) G. De Landsheere "The Causes of the Resistance of Teachers to Innovation", (Paper VI of this volume).

C. Recurrent Education

It is now generally recognised that the main characteristic of "initial training" is its incompleteness. Particularly in a rapidly changing society, such training implies the necessity for teachers to further their education and degree of specialisation throughout their careers, even moving from one to another field of pedagogy where this seems necessary.

Little more than lip-service is currently paid by educational authorities in most OECD countries to this proposition. Rather than appearing as an essential, "recurrent education" still occupies the status of an attractive trimming. The high levels of expenditure and the adjustments in teachers' working conditions, that could make recurrent education less of a vacation pastime or an arduous evening chore, are generally not forthcoming.

Even where recurrent education programmes are being set up, they are normally conceived with a certain one-sidedness. In addition to the provision of courses, teachers also need, if recurrent education is to succeed, to be convinced they can influence and guide their own training programmes. (1) Since little in their initial training or working environment is conducive to such thinking, however, the present prospects for recurrent education seem very limited. Additionally, recurrent education has usually no formal position in teachers' career structures and thus can play no official role in developing teaching specialisms or expertise. It has yet to be recognised, therefore, as an essential ingredient in professional teacher training.

If, however, it is accepted that learning should be a life-long activity, and should be encouraged amongst all adults to ensure not only personal enrichment but also individual flexibility in a rapidly changing labour market, then teachers are the obvious adult candidates with which to begin. Their own participation in recurrent education could serve as a model and an encouragement for the wider population and thus begin the pursuit of a much broader educational target - the development of "a learning society".

1) B. Thelin, "The Training and Recruitment of Teacher Trainers in Sweden", (Paper IX of this volume).

D. Involving Teachers in Educational Research and Development

A further proposal now being examined is that the development of the teaching profession depends on teachers becoming more closely connected with educational research and becoming themselves prime aspects of educational innovation. This is supported by evidence from recent surveys which show that centralised programmes of educational research and innovation are less likely to bear fruit when the teachers' co-operation and involvement are not enlisted.

This, it is pointed out, could currently be achieved in various ways : teachers could be involved in research work in their actual schools ; teachers' unions could take greater initiative in mounting research and development programmes ; periods of detachment could be arranged for practising teachers with particular interests ; educational research centres could be established in which teachers, research personnel and administrators might meet to discuss and develop common problems.

Further research underlines, however, the great difficulties that exist in involving teachers in research and development work within the conventional school system. Summarising the work of the Keele Integrated Studies Project, M.D. Shipman records, "the pressures involved on teachers involved in innovation to revert back to traditional content and methods are strong. These are only partly due to the nature of the innovation. They are also the product of the way the teaching role is traditionally defined. The innovating role seemed insecure. The assessment of standards of work was difficult. The new content was strange. Enquiry methods often seemed too time-consuming." (1) To expect the average teacher to participate in educational research and development programmes when such pressures are operative and no relief from them is offered is to expect too much.

SUMMARY

These four aspects of teacher policy by no means cover all the ideas currently under consideration for the development of teaching expertise. However, their piecemeal nature and lack of explicit relationships, either to each other or to broader educational goals, provide a clear demonstration of present conceptual

1) M.D. Shipman, "The Role of the Teacher in Selected Innovative Schools in the United Kingdom", (Paper III of this volume).

and planning inadequacies in this field. The last section of this paper will therefore attempt to see what policies for teacher professionalisation might begin to look like within the context of broader educational principles and social objectives.

Part Three

GUIDELINES FOR FUTURE TEACHER POLICIES

By concentrating first on expansion and then on piecemeal reform, policies for recruiting, training and utilising a more professional teaching force have failed, in most OECD countries over the past twenty years, to define and attack the basic problems by which teachers, pupils and others affected by current educational practices are confronted. It is striking that in most of the policies reviewed there have been few explicit ideas on the nature of teaching expertise, i.e. on what learning and the management of learning involves. Secondly, one notes a lack of concern with pupil/teacher relationships and thus a failure to evaluate the role of the professional teachers in anything but the vaguest of terms. Thirdly, there is little indication that such policies have been based on an understanding of the present educational system or framed with any ideal, future state in mind. As a result, these policies now demonstrate the failure of both politicians and planners to evaluate the current social and political functions of education or the commitment to these that, as outlined in Part One teachers continue to preserve. Though this is not the occasion for pursuing the reasons for this failure in detail, they clearly go beyond the technical reasons suggested and relate to the social and psychological make-up of those involved in educational decision-making.

Even a brief consideration of the nature of the learning process does however yield certain indications of the functions that professional teachers might be expected to fulfil and of the lines along which teacher policies might therefore be gradually redefined. The process of learning is very dependent on both internal psychological development and the nature of one's external, physical and social environment. Although externally the occurrence of learning is demonstrated by changes in performance, behavioural changes do not alone provide convincing evidence that learning has taken place.

Learning is also an internalisation of experience involving an acceptance, understanding and integration of one's perceptions.

Different theories of the learning process have regularly failed to come to terms with this dualism of the human condition. Thus Skinnerism has concentrated on the behavioural or external aspects of learning ; Gestalt psychology and phenomenology in general on internalisation. Others such as Jensen, by concentrating on the hereditary aspects of intelligence, have focused on the pre-determination of learning ability, rather than on the considerable differences in learning that various emotional experiences or environmental pressures can bring about ; they have thus nearly side-stepped the learning issue altogether.

Only in those isolated cases where the nature of individual development has been taken really seriously - as in a few experimental schools or a small percentage of the British primary schools - have radical structural changes in the organisation of learning experiences in school begun to occur. (1) Conversely, only in those cases where there has been a radical re-appraisal of school structures, as in Sweden, have different and arguably better pupil/teacher relationships begun to evolve (2).

Thanks to the labours of Freud, Erikson and others, it is now well substantiated that a child's cognitive development is very dependent on his general progress through the stages of biological and psychological growth. The main periods of cognitive growth outlined by Piaget (the sensori-motor period, the pre-conceptual stage, the intuitive sub-stage, the period of concrete operations, the period of formal operations) are not experienced by individuals in terms of an inevitable progression but are created by individuals at least partly on the basis of their biological and psychological development. Thus in adolescence, for example, a time of considerable emotional turmoil, individuals are quite likely to regress in their thinking to one of the early stages. All this implies the overwhelming necessity for teachers to be able to understand and cope with the psychological basis of child development, in order to assist an individual's cognitive growth. This demands considerable personal maturity of the teacher.

1) M. Kogan, "English Primary Schools : A Model of Institutional Innovation ?" in Educational Planning in Perspective ed. by T. Green, 1971.

2) S. Marklund "The Role of the Teacher in Educational Innovation in Sweden", (Paper V of this volume).

Complementary to this is the realisation that cognitive growth is also dependent on the nature of an individual's external environment. In this the school is but one of many elements and, as much research has established, an element in which a child's progress is very much dependent on his family background and other social experiences. A pupil/teacher relationship intended to advance learning is thus dependent for its effectiveness not only on the teacher's personal maturity. It also depends on the teacher's sensitive appreciation of the child's whole learning world, on the adequacy of that world, and on the teacher's impact therein. (1)

Taking learning as the prime educational goal, there are thus two explicit guidelines along which to restructure both future teachers' roles and policies for teacher recruitment and training : encourage teachers to develop towards personal, emotional and cognitive maturity ; help teachers both to understand and to evaluate their own impact on the child's whole learning environment. For teacher recruitment and training policies these seem to imply the following :

- Recruit trainee teachers for their psychological maturity or their potential to mature without serious difficulty (2).
- Encourage this maturity through the trainee teachers' interest in and experience of child development.
- Since colleges of education offer limited opportunities either for learning about child development or for developing towards personal maturity, shift the basis of teacher training back to its origins, i.e. to the schools and to in-service training.
- Make the trainee teachers' emotional and intellectual development the twin goals of teacher training programmes ; develop the college of education as the main source of psychological support and intellectual stimulation for the trainee teacher and his school.
- Since the process of personal and intellectual development is potentially without end, turn recurrent education into one of a teacher's regular commitments and link it closely to on-going research.

1) D.A. Pidgeon "The Implications of Teachers' Attitudes for the Reform of Teacher Training", (Paper VII of this volume).

2) "The Human Development Goal" in Educational Planning in Perspective, Thomas Green, Ed., IPC Business Press Ltd., Guilford, Surrey, England, 1971.

- Help teachers to understand and become responsive to pupils' social environments. This goal and, with it, the "openness" or "responsiveness" of the teaching profession (1), could be pursued in the following manner :

- a) In initial and recurrent training programmes teachers could be given experience of different social environments. Opportunities for teachers to participate in certain types of welfare work or to conduct brief surveys of different local communities could, for example, be built into training programmes.
- b) The social participation of teachers could be encouraged through, for example, the development of certain types of community schools, i.e. schools as consciously planned agencies for the improvement of the community.
- c) Parent/teacher associations could become crucial bodies for all schools, and given financial support.
- d) Legislation could encourage broadly-structured school and college governing boards, linking parents, pupils, teachers, officials and other members of the communities surrounding the school.
- e) Educational planning departments could assume responsibility for organising communication between teachers, parents, officials, etc. at different educational levels, particularly where contentious issues such as the nature of sex education, religious instruction or the use of corporal punishment, etc. arise. (2)
- f) In the light of this extensive communication pupils' learning needs might begin to be met by other specialist agencies outside the school system. Where such agencies did not exist, pressures could be applied for their creation. Thus the formal school system might begin to delegate many of those responsibilities with which it cannot cope today.

If, however, one returns to the material presented in Part One of this chapter, one realises the degree to which these policies, if pursued on their own, must fall on stony ground and fail to bear fruit. Teachers are so much a part of the conventional fabric of their societies that they cannot develop professional expertise and

1) See penultimate paragraph of introduction to this chapter.

2) S. Balloch, "The Social Environment of Education and Educational Planning", OECD document, 1971.

attitudes, individualised pupil/teacher relationships and a willingness to further their own development and knowledge without prior changes in the environment in which they and their pupils are expected to work. Firstly, until the social and political functions of education are substantially modified, teachers cannot be expected to concentrate on developing expertise in the management of learning. Secondly, until gross inequalities in educational opportunity between pupils are reduced, one cannot expect pupils to be capable of establishing individual and workable relationships with teachers in the conventional, compulsory school system. Thirdly, until the social reform of education challenges the teachers' conventional images of social structure and hence of individual pupil's abilities and destinies, the insulated flow of conformist pupils into schools and of conformist teachers of teachers back into the colleges of education will continue unshaken. (1) There will be no point in the cycle at which adaptation to the changing educational needs of individuals or groups can occur.

No two of the member countries of the OECD are identical in social structural pattern or in the political and social inequalities institutionalised in their educational systems or their teaching bodies. For each society, therefore, different styles, paces and methods of educational reform will clearly be appropriate. For all, however, the general principle surely holds: the professionalisation of teachers and the consequent creation of a more effective learning environment for schoolchildren cannot be accomplished unless policies for improving the recruitment, training and utilisation of teachers are implemented within the context of other social and educational changes. More than any other single aspect of educational reform, new teacher policies, to be effective, call for a new social contract for education.

1) The Swedish example provides an interesting case study.

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